COOPERATIVE SALMON DRIFT GILLNET TEST FISHING IN THE LOWER YUKON RIVER, 2001

By

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and

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OEO/ADA STATEMENT

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ABSTRACT

The Lower Yukon drift gillnet test fish program is designed to assess the run timing and relative abundance of chinook *Oncorhynchus tshawytscha*, chum *O. keta,* and coho *O. kisutch* salmon. The feasibility of using drift gillnets to obtain pertinent information inseason, which fisheries managers can use for assessing relative abundance and run timing of salmon returning to the Yukon River drainage, is tested. The ability of the Middle Mouth drift gillnet test fishery to correlate with trends in other Lower Yukon test fisheries or the Pilot Station sonar passage estimates were inconclusive. Incorrect timing of drift fishing may cause the failure of Middle Mouth to correspond other assessment projects in the Lower Yukon River during the summer season. Fall operations for drift gillnet test fishing in the Lower Yukon River were similar to trends observed in the sonar passage estimates obtained at Pilot Station. Age, sex and length measurements were taken; run timing recorded and catch per unit effort calculated for each species.

KEY WORDS: Yukon River, chinook, chum and coho salmon, gillnet test fishery, inseason run assessment

INTRODUCTION

The Lower Yukon drift gillnet test fish program is designed to assess the run timing and relative abundance of chinook *Oncorhynchus tshawytscha*, chum *O. keta,* and coho *O. kisutch* salmon. The goal of this three year project is to determine the feasibility of using drift gillnets to obtain pertinent information inseason, which fisheries managers can use for assessing relative abundance and run timing of salmon returning to the Yukon River drainage. These data may be used in conjunction with other information to help ensure that sufficient numbers of salmon pass the Lower Yukon to provide for escapement into Alaskan and Canadian tributaries, and to provide for subsistence users' needs.

Salmon numbers in the Yukon River have been depressed in recent years, prompting ADF&G to expand an existing drift gillnet test fishery located at Big Eddy to include drift locations at Middle Mouth with the assistance of the Emmonak Tribal Council. The new program now includes two drift gillnet test fishing locations at the Middle Mouth of the Yukon River Delta. The addition of the Middle Mouth drift locations allows for assessment of salmon transiting the North, Middle, and South Mouths of the Yukon River Delta downstream from major commercial and subsistence fisheries.

The additional information obtained by the Middle Mouth drift gillnet test fishery should enhance the existing set gillnet test fisheries in the Lower Yukon. In recent years, managers are uncertain if the nets are providing representative samples of the chum (summer and fall) salmon runs at the Middle Mouth and Big Eddy set gillnet test fishing sites. Deviation of the set gillnet data may be explained by changes in riverbanks, channels, and sand bar migrations.

OBJECTIVES

The objectives for the Lower Yukon drift gillnet test fisheries are to:

1.) Collect relative abundance information on chinook, chum (summer and fall), and coho salmon on a daily basis.
2.) Maintain an up-to-date log of catches and CPUE index by species.
3.) Compare CPUE index and catch trends with Big Eddy and Middle Mouth chinook salmon set net test fishing results (summer season only).
4.) Sample and record age, sex, and size used in scale pattern analysis.

METHODS

Two locations were used in 2001 for the Lower Yukon drift gillnet test fish project. The first test fishing location, Big Eddy, is located in the main channel of the South Mouth of the Yukon River delta upstream and southeast from the village of Emmonak (Figure 1). One station on each side of the outlet, north and south shore, was drifted so that information obtained could be compared to the set gillnet test fishery operated by ADF&G. Station 1 at Big Eddy was located directly south of the confluence of the Kwiguk Mouth and South Mouth near the southern shore. Station 2 was located directly east of Station 1 on the opposite shore at approximately 0.25 mile (400 m) upstream and southeast from the starting point of Station 1. The Big Eddy drift gillnet fishing locations were primarily chosen to assess salmon transiting via the South Mouth of the Yukon River delta. The locations were secondarily chosen because of their proximity to the village of Emmonak

The second test fishing location, Middle Mouth, was located upstream and south from the confluence of the Kawanak and Kwikpak Passes to assess salmon from the North and Middle Mouths of the Yukon River delta (Figure 1). Two drift gillnet stations were utilized in Kwikpak Pass near Hamilton Slough, one on either side of the outlet at approximately river mile 24 (39 km). Station 1 was located on the west side of the river and Station 2 was located on the opposite bank. The Station 1 drift gillnet starting point was at a place named "Hootch's Camp" approximately 25 minutes from the Middle Mouth camp by skiff. Station 2 was located on the East bank approximately 0.25 to 0.50 mile (400-800 m) downstream and north from Hootch's Camp.

Different mesh sizes were used in the summer and fall fishing seasons. In the summer season, two drift gillnets with different mesh sizes were used from 8 June to 15 July at Big Eddy and from 12 June to 15 July at Middle Mouth. A single mesh size drift gillnet was used in the fall season from 16 July to 28 August, when the test fisheries were terminated for the season. The three different types of gillnets were of similar construction, 50 fathoms (91.4 m) in length with a cork marking 25 fathoms (45.7 m). The summer season used gillnets designed to capture chinook and summer chum salmon. The gillnets for chinook salmon had 8.25-inch (21.0 cm) mesh and were 35 meshes in depth, and the summer chum salmon gillnets were composed of 5.5-inch (14 cm) mesh and was 45 meshes in depth. The gillnets used for catching fall chum and coho salmon were constructed with 6.0-inch (15.2 cm) mesh and were 45 meshes in depth.

All gillnets were fished by drifting from 22 foot (6.7 m), open aluminum skiffs with one end of the net attached to the skiff and the other attached to a buoy. In times of increased salmon abundance, inclement weather, excess debris, or a lack of crew experience, the gillnets would be shortened to the 25 fathom cork to make the net more manageable. When 25 fathoms of the gillnets were fished, that information was recorded and compensated for in the CPUE calculations. The drift gillnets were fished twice daily at the Middle Mouth and Big Eddy locations.

Times used for determining tides were based on the Nushagak tide table. Timing of the tidal surge at Big Eddy was determined to occur seven hours after high tide published for the mouth. The Middle Mouth tidal surge required a correction factor of 5.5 hours after the posted high tide.

The deployment, fishing, and retrieval of the drift gillnets were recorded for each sampling event. Catch per unit effort (CPUE) was calculated using fish per 100 fathom-hours:

$$CPUE = [((100 \text{ fathom} * 60 \text{ minutes}) * (n))/(L*T)]$$

where:

n= number of fish caught,
L= length of net in fathoms
T= the time the net fished

The time the net fished was calculated using:

$$T = ([(\text{set time} + \text{retrieval time})/2] + \text{soak time})$$

(Molyneaux 1999). The amount of time the gillnet was soaked varied. An independent CPUE calculation was made for each drift fished. This value was summed with CPUE calculations from the same day and gear type and then averaged to obtain a CPUE for the day and gear type:

$$\text{Daily CPUE} = ((\sum CPUE)/n)$$

where:

n=number of sets for the given day and gear type.

The fish captured were counted and released unharmed, unless injured by the netting activity. Fish injured by gillnets were distributed locally for subsistence purposes.

Retained salmon were sampled for age, sex and length (ASL). Preseason ASL sampling goals were set at 30 fish per day for chinook, chum (summer and fall), and coho salmon. All salmon lengths were measured as mid-eye to fork-of-tail length and rounded off to the nearest five mm. Three scales were taken from each chinook and coho salmon sampled for ASL. One scale was collected from each summer and fall chum salmon sampled for ASL. The sex of each salmon was verified through visual examination of the gonads.

Summer Season

Big Eddy and Middle Mouth locations were fished twice daily using drift gillnets equipped with 8.25 (chinook) and 5.5 (chum) inch stretched mesh as previously described. Drift gillnet fishing at the Big Eddy location started 8 June and continued through 15 July for the summer season. Middle Mouth drift fishing started 12 June and continued through 15 July when the fall season schedule began. Both Big Eddy and Middle Mouth locations were fished using similar methods. Station 1 was fished first using the chinook gillnet followed by the summer chum salmon gillnet,

and then Station 2 was drifted using the chinook gillnet followed by the summer chum salmon gillnet. The objective was for the net to be retrieved after an estimated 30 fish had been captured, but before the net had been fished twenty minutes. The species, number caught, number retained, mesh size, station, and fishing times were recorded and injured fish were retained for local subsistence use and ASL collection.

Fall Season

From 16 July until the end of the Lower Yukon drift gillnet test fishery on 28 August, 6.0-inch mesh gillnets with the previously described dimensions were utilized. Similar to the summer season, the objective was to retrieve the drift gillnets after an estimated 30 fish had been soaking. These nets were fished once per station twice daily at Big Eddy and Middle Mouth starting with Station 1, followed by Station 2. The species, number caught, number retained, mesh size, station, length of gillnet used, and fishing times were recorded and injured fish were retained for local subsistence use and ASL collection. During the fall season the crew installed lights on the skiffs for evening and night fishing to illuminate the deck. Strobe lights were attached to buoys and hand-held spotlights were also used to illuminate the nets during night fishing operations.

RESULTS

Summer Season

Chinook Salmon

The mean chinook salmon drift time at the Big Eddy location was 18.4 minutes per drift and a total drift time of 71.3 minutes per day using 8.25-inch mesh (Appendix A1). A total of 408 chinook salmon were captured by the 8.25-inch gillnet at Big Eddy with a corresponding cumulative CPUE of 1,047 (Table 1). Of the total caught, 285 chinook salmon were represented by ASL measurements from Big Eddy. Age 1.4 chinook salmon predominated the sample, making up 70.2% of the total fish captured. Chinook salmon ages 1.2, 2.4, and 2.3 made up less than 5% of the total sample (Table 2). Chinook salmon ages 1.3 and 1.5 occurred in similar numbers in the Big Eddy, making up 15.8% and 10.5% of the sample respectively. Approximately 54.4% of the samples were male. Mean length for male chinook was 552 mm (n=5), 725 mm (n=39), 810 mm (n=94), 730 mm (n=1), 874 mm (n=15), and 800 mm (n=1) for ages 1.2, 1.3, 1.4, 2.3, 1.5, and 2.4 respectively. Female chinook salmon ages 1.3,1.4,1.5, and 2.4 had mean lengths of 787 mm (n=6), 835 mm (n=106), 874 mm (n=15), and 827 mm (n=3) respectively (Table 2). The mid point of the chinook salmon run occurred 21 June (Table 1).

The mean chinook salmon drift time at Middle Mouth was 19.7 minutes per drift and a total of 75.4 minutes per day using 8.25-inch mesh (Appendix A1). A total of 136 chinook salmon were captured at the Middle Mouth location with a corresponding cumulative CPUE of 194.2 (Table

1). Of the 117 chinook salmon represented by ASL data, approximately 54.7% were female. Age 1.4 predominated the sample making up 76.9% of the total, followed by age 1.3 comprising 17.1% of the total. Ages 1.2 and 1.5 were minor occurrences with 0.9% and 5.1% respectively. Mean lengths for male chinook were 545mm (n=1), 766 mm (n=15), 819 mm (n=36), and 860 mm (n=1) for ages 1.2, 1.3, 1.4, and 1.5, respectively. Female chinook mean lengths for age 1.3, 1.4, and 1.5 were 817 mm (n=5), 852 mm (n=54), and 889 mm (n=5), respectively (Table 2). The mid point of the chinook salmon run at the Middle Mouth Test fishery location was June 27 (Table 1).

A total of 544 chinook salmon were caught at the Big Eddy and Middle Mouth drift gillnet test fishery locations, with a corresponding cumulative CPUE of 620.8. The combined mid point of the chinook salmon run at the Big Eddy and Middle Mouth locations occurred on 22 June (Table 1). In 2001, 51.7% of the total chinook salmon represented in the ASL sample were males (Table 2).

ADF&G worked in cooperation with the U. S. Fish and Wildlife Service (USFWS) to distribute salmon retained by the Big Eddy and Middle Mouth drift gillnet test fisheries to the local communities of Emmonak, Alakanuk and Kotlik for subsistence use. Of the 698 chinook salmon captured in all mesh sizes combined, 163 were released unharmed, 508 were given away for subsistence uses, and 27 chinook salmon were discarded because of few recipients or poor fish condition (Appendix B1).

Summer Chum Salmon

The mean drift time in the Big Eddy location was 18.8 minutes per drift and a total of 72.7 minutes per day using 5.5-inch gillnet for summer chums (Appendix A1). A total of 1,291 summer chum salmon were captured at Big Eddy with a corresponding cumulative CPUE of 2,953 (Table 3). Females comprised 63.4% of the 538 salmon represented by ASL data. Age 0.4 and 0.3 predominated, making up 71.4% and 27.1% of the total sample, respectively. Age 0.5 made up the remaining 1.5% of the summer chum salmon sample. Mean lengths for male summer chum salmon captured at Big Eddy were 568 mm (n=53), 588 mm (n=139), and 593 mm (n=5) for salmon ages 0.3, 0.4, and 0.5 respectively. Mean lengths for female summer chum salmon age 0.3, 0.4 and 0.5 were 557 mm (n=93), 571 mm (n=245), and 565 mm (n=3) respectively (Table 4). The mid point for the of summer chum salmon run at the Big Eddy drift location was 24 June (Table 3).

The mean drift time at Middle Mouth was 19.4 minutes per drift and a total of 74.3 minutes per day for summer chum salmon using 5.5-inch mesh gillnet (Appendix A1). There were 444 total summer chum captured with a corresponding cumulative CPUE of 650 (Table 3). Females comprised 68.5% of the 200 summer chum salmon represented by ASL data. Age 0.4 summer chum salmon made up 81.5% of the total sample and age 0.3 made up 18% of the total. Age 0.5 chum comprised 0.5% of the catch. Mean lengths for male chum salmon were 557 mm (n=13) and 593 mm (n=50) for salmon ages 0.3 and 0.4 respectively. Female chum salmon aged 0.3, 0.4, and 0.5 had mean lengths of 557 mm (n=23), 582 mm (n=113), and 625 (n=1) respectively (Table 4). The mid point of the summer chum salmon run at the Middle Mouth location was 28 June (Table 3).

A total of 1,735 summer chum salmon were caught at the Big Eddy and Middle Mouth locations with a corresponding cumulative CPUE of 1,802 (Table 3). Females dominated the combined Big Eddy and Middle Mouth ASL results making up 64.8% of the sample. The major age class was 0.4, of which 384 were caught (Table 4).

Approximately 166 summer chum salmon were released unharmed, local subsistence users utilized 1,698 summer chum salmon, and 89 were discarded because of few recipients or poor fish condition (Appendix B1). These numbers reflect summer chum salmon caught in summer chum and in chinook salmon gear (all related mesh sizes), therefore the 1,953 fish released, discarded or given to residents is larger than the number of fish caught in the summer chum salmon drift gillnet test fisheries alone.

Fall Season

Fall Chum Salmon

After 16 July, all chum salmon are considered fall chum salmon for management purposes. The mean drift time in the Big Eddy location was 19.8 minutes per set and a total of 73.9 minutes per day using 6.0-inch mesh gillnets (Appendix A1). Big Eddy drift gillnet test fishing captured 731 fall chum salmon with a corresponding cumulative CPUE of 1,171 (Table 5). Age, sex, and length data were reported for 332 fall chum salmon. Female chum salmon made up 59.3% of the total fish represented by ASL data. Age 0.3 and 0.4 fall chum salmon predominated the sample making up 71.1% and 28.6% of the total sample respectively. Age 0.2 made up 0.3% of the Big Eddy run. Mean lengths for male fall chum salmon were 605 mm (n=96) and 625 mm (n=39) for ages 0.3 and 0.4 respectively. Female fall chum salmon mean lengths were 580 mm (n=1), 591 mm (n=140), and 615 mm (n=56) for ages 0.2, 0.3, and 0.4 respectively (Table 6). The mid point for the fall chum salmon run at the Big Eddy drift location was 2 August (Table 5).

Middle Mouth drift gill net test fishing had a mean fishing time of 19.8 minutes per set and 76.5 minutes per day using 6.0-inch mesh gillnet (Appendix A1). Fishing at the Middle Mouth drift gillnet test fishery location resulted in a total catch of 1,004 fall chum salmon, with a corresponding cumulative CPUE of 1,481 (Table 5). Female chum salmon made up 60.8% of the 502 fall chum salmon represented by ASL data. Age 0.3 accounted for 63.1% and age 0.4 accounted for 36.3% of the total salmon represented in the ASL data. Age 0.2 and 0.5 made up less than 1% of the sample. Mean length measurements for male fall chum salmon were 545 mm (n=1), 601 mm (n=121), 617 mm (n=74), and 640 mm (n=1) for ages 0.2, 0.3, 0.4, and 0.5 respectively. Females age 0.2, 0.3, and 0.4 had mean length measurement of 575 mm (n=1), 592 mm (n=196), and 609 mm (n=108) respectively (Table 6). The mid point of the fall chum salmon run at the Middle Mouth location was 1 August (Table 5).

A total of 1,735 fall chum salmon were captured at the Big Eddy and Middle Mouth drift test fishery locations with a corresponding cumulative CPUE of 1,326.4 (Table 5). Approximately 60.2% of the total fall chum salmon represented in ASL data were female (Table 6). The major (66.3%) age class was 0.3, of which 553 were caught.

A total of 1,738 chum salmon where released, discarded or given to residents. Forty-four fall chum salmon were released unharmed, 85 were discarded, and 1,609 were distributed to local subsistence users (Appendix B1). Salmon were discarded because of poor fish condition or few recipients. The discrepancy between the total captured and those released, discarded or given to residents could be caused by operator error.

Coho Salmon

The mean drift time in the Big Eddy location was 19.8 minutes per set and a total of 73.9 minutes per day using 6.0-inch mesh gillnet (Appendix A1). The Big Eddy drift gillnet test fishery captured 174 coho salmon with a corresponding cumulative CPUE of 272.8 (Table 7). Female coho salmon made up approximately 46.9% of the 130 fish represented by ASL data. Four age classes comprised the ASL data with 83.8% of the sample being age 2.1. The remaining ages constituted a minor portion of the run with age 1.1 representing 12.3% followed by age 2.2 (2.3%) and 3.1 (1.5%). Mean lengths for male coho salmon were 598 mm (n=9), 588 mm (n=57), 573 mm (n=2), and 600 mm (n=1) for ages 1.1, 2.1, 2.2, and 3.1 respectively Female coho salmon ages 1.1, 2.1, 2.2, and 3.1 had mean lengths of 602 mm (n=7), 595 mm (n=52), 580 mm (n=1), and 540 mm (n=1), respectively (Table 8). The mid point for the coho salmon run at the Big Eddy drift location was 8 August (Table 7).

Middle Mouth drift gill net test fishing had a mean fishing time of 19.8 minutes per set and 76.5 minutes per day using 6.0-inch mesh gillnet (Appendix A1). At the Middle Mouth test fishing location, 345 coho salmon caught with a corresponding cumulative CPUE of 516.1 (Table 7). Four age classes comprised the 252 coho salmon represented by ASL data, ages 1.1, 2.1, 2.2, and 3.1. Most coho were age 2.1 (85.7%), followed by age 1.1 (10.3%), 2.2 (1.6%), and 3.1 (2.4%). Approximately 56% of the sample was made up of female coho salmon. Male coho salmon had mean length measurements of 584 mm (n=17), 583 mm (n=91), 585 mm (n=2), and 610 mm (n=1) for ages 1.1, 2.1, 2.2, and 3.1 respectively. Female coho salmon ages 1.1, 2.1, 2.2, and 3.1 had mean lengths of 594 mm (n=9), 593 mm (n=125), 603 mm (n=2), and 571 mm (n=5), respectively (Table 8) The mid point for the coho salmon run at the Middle Mouth drift location was 13 August (Table 7).

A total of 519 coho salmon were captured in the Big Eddy and Middle Mouth drift gillnet test fisheries, which resulted in a corresponding cumulative CPUE of 394.5 (Table 7). Female coho salmon comprised 52.9% of the 382 total coho salmon represented by ASL data (Table 8).

Twenty-seven coho salmon were released unharmed, 24 were discarded, and 468 were distributed locally for subsistence uses. Salmon were discarded because of poor fish condition or few recipients (Appendix B1). The total captured equals the total amount released unharmed, discarded or distributed.

DISCUSSION

Summer Season

The Middle Mouth drift gillnet test fishery started the season by fishing simultaneously with the drift gillnet test fishery conducted at Big Eddy, which was seven hours after the posted high tide at the Yukon River mouth as recorded in the Nushagak tide table. We believed that the Middle Mouth location, being only four-river miles (6.4 km) farther upriver than the Big Eddy location, would have similar timing for the tidal surge. This timing proved to be incorrect for the Middle Mouth drift locations. An adjustment in fishing time by three hours after Big Eddy fishing time was attempted with little improvement. To determine when the tidal surge passed the Middle Mouth campsite, a technician measured water levels in 0.5-hour increments. Using this technique, we determined that fishing 5.5 hours after the high tide posted at the mouth using the Nushagak tide table corresponded to the tidal surge at Middle Mouth. This adjustment was finalized and implemented 28 July. This date was 13 days after 8.25 and 5.5-inch summer gillnets were discontinued and the 6.0-inch fall drift gillnet was being utilized.

During the summer season, the Middle Mouth drift gillnet test fishery did not trend with other Lower Yukon test fisheries and/or the Pilot Station sonar passage estimates. The mid point for the chinook salmon run at the Middle Mouth test fishing location appeared to occur on 27 June (Table 1). This was the same date as the Pilot Station sonar project mid point (Table 9). We expected the combined Big Eddy and Middle Mouth test fishery to reach its mid point two to three days before the Pilot Station estimates because of transit time for salmon from the test fishery to the sonar site (Appendix C). The mid point appeared to occur at the Big Eddy test fishery location on 21 June, this was six days before the Middle Mouth mid point. When the data from Middle Mouth and Big Eddy drift gillnet test fishing locations were combined we determined that the mid point of the chinook salmon run in the lower Yukon River was 22 June, five days before the Pilot Station sonar mid point estimate (Tables 1 and 9). The initial timing of drift gillnet fishing perhaps contributed to the failure of Middle Mouth to correspond to the other assessment projects in the Lower Yukon River during the summer season. The combined set of gillnet test fishery in the Lower Yukon River reached its mid point 25 June for chinook salmon (Table 10) two days before Pilot Station. The Lower Yukon set gillnet project's daily catch rates generally followed trends in passage estimates recorded for chinook salmon at Pilot Station (Figures 2 and 3). One would expect results similar to those obtained from the set gillnet test fishery when comparing Lower Yukon test fisheries with Pilot Station sonar estimates.

In 2001, the Lower Yukon drift gillnet test fishery did not appear to be a reliable tool for relative abundance or timing of chinook salmon because of difficulties in initial timing of the tides and the lack of comparable historical data. We hope that with increased experience, drift gillnet test fishing in Middle Mouth and Big Eddy will result in data that are representative of the relative chinook salmon abundance and timing.

Chinook salmon captured at Big Eddy and Middle Mouth by drift gillnets appeared to be smaller than fish captured by Big Eddy and Middle Mouth set gillnets. The difference between male chinook salmon caught at Big Eddy ranged from 8 mm for males age 1.2 to 33 mm for males age

1.5. Chinook salmon age 2.4, of both sexes, and females age 1.3 had larger mean lengths than those from set gillnet samples. Middle Mouth fish were smaller by 8 mm for females age 1.5 to 18 mm for males age 1.4 and females age 1.5 (Table 2 and Appendix C1). These differences may be explained by the different mesh sizes used by the set gillnet project (8.5-inch compared to 8.25-inch), efficiency differences between the set and drift gillnets, the small sample size from Middle Mouth compared to the set gillnet fishery (117 chinook salmon from Middle Mouth compared to 596 from set gillnet catches), or sampling error. More data will need to be collected and analyzed before a definitive trend may be described.

The 2001 results from summer chum salmon captured by the 5.5-inch drift gillnets in the Big Eddy and Middle Mouth test fisheries can only be compared to the escapement estimates obtained from the Pilot Station sonar project because no set gillnet test fishery targeting chum salmon was conducted at either the Big Eddy or the Middle Mouth locations. The mid point of the summer chum run at the Middle Mouth drift gillnet test fishery lagged behind that of the Big Eddy location, occurring on 28 June compared to 24 June (Table 3). The summer chum salmon mid point occurred on 29 June at the Pilot Station sonar project (Table 9). The mid point for Middle Mouth occurred slightly later than would be anticipated from the Pilot Station estimates. Big Eddy's mid point occurred earlier than would be anticipated. When Middle Mouth and Big Eddy are combined the mid point occurs 24 June, five days before Pilot Station. This deviation from the expected results is though to be an artifact of sampling error caused by the initial mistiming of the tidal surge in the Middle Mouth area during the summer season.

The mid point of the chinook salmon run at Middle Mouth and Big Eddy was six days apart for chinook and four days apart for summer chum. The reasons behind the differences in the mid point from Big Eddy and Middle Mouth are likely the result of the initial mistiming of the tidal surge in the Middle Mouth drift gillnet test fish location. At present, not enough data exists to explain the differences in mid points for chinook and summer chum salmon from Middle Mouth and Big Eddy drift gillnet test fisheries from the results of other salmon enumeration projects in the Lower Yukon.

Drift gillnet test fishing at Middle Mouth and Big Eddy for summer chum salmon failed to follow the tends in estimated escapement as recorded by sonar at Pilot Station (Figures 4 and 5). Because of the low numbers of summer chum salmon caught at Middle Mouth by the drift gillnet test fishery, the cumulative totals for Middle Mouth and Big Eddy test fisheries are skewed toward the results obtained at the Big Eddy test fishery. The initial mistiming of the tidal surge may have caused the low catch rates observed at Middle Mouth

For both chinook and summer chum salmon the drift gillnet test fishery at Big Eddy showed a mid point that was two to three days before what would be predicted from Pilot Station sonar passage estimates allowing for transit time for salmon from Big Eddy to Pilot Station. Initial daily CPUE calculations for the Big Eddy drift gillnet test fishery for chinook and summer chum salmon showed similar trends as the Pilot Station daily sonar passage estimates. The Middle Mouth drift gillnet test fishery did not show trends that would track well with Pilot Station sonar estimates for either chinook or summer chum salmon. The reasons behind the differences in observed run timing at the Big Eddy location and what would be predicted from Pilot Station escapement for the drift gillnet test fishery are unknown. Mistiming the tidal surge at Middle

Mouth may have skewed the data so that the sample was not representative of the population. Salmon migrating through the North and Middle Mouth of the Yukon Delta may not have had the same probability of being captured as those migrating past the Big Eddy locations.

Fall Season

Fall operations for drift gillnet test fishing in the Lower Yukon River corresponded with tends observed in the sonar passage estimates obtained at Pilot Station for fall chum salmon (Pfisterer *In Press*). Pulses of fall chum salmon observed in the combined CPUE for Big Eddy and Middle Mouth were observed in the Pilot Station sonar passage estimates (Figure 6, 7, and 8). The mid point for the fall chum salmon run occurred on 1 August at the Middle Mouth drift gillnet test fishery and on 2 August at Big Eddy. The combined results from Middle Mouth and Big Eddy show that the mid point of the fall chum salmon run occurred on 2 August (Table 5). The mid point of fall chum salmon occurred on 3 August at the Pilot Station sonar site (Table 11). This result is similar to what would be expected for transit time between the two test fisheries and the Pilot Station sonar site.

Relative abundance information cannot be calculated from the data collected for fall chum salmon at Big Eddy and Middle Mouth drift gillnet test fishery locations. However, the agreement of the 2001 CPUE data calculated for the Lower Yukon drift gillnet test fisheries and sonar passage estimates at Pilot Station indicate a relationship may be used in the future.

The pulses of coho salmon caught in the Middle Mouth and Big Eddy drift gillnet test fisheries also followed trends observed in Pilot Station sonar estimates, although not to the same degree as shown by fall chum salmon (Figures 9, 10, and 11). The mid point of the coho salmon run in the Middle Mouth drift gillnet test fishery occurred on 13 August and on 8 August at Big Eddy. The combined results from both locations show that the mid point of the coho salmon run occurred on 12 August (Table 7). The mid point of the coho salmon run, as estimated by the Pilot Station sonar occurred on 16 August (Table 11). This is slightly later than one would anticipate given transit time for salmon between the Lower Yukon test fisheries and the Pilot Station sonar. More data should be collected to verify if the difference in the coho salmon run midpoints at Middle Mouth and at Big Eddy were a trend or an anomaly.

RECOMMENDATIONS

The correlation of the Middle Mouth drift gillnet test fishery with trends in other Lower Yukon test fisheries or the Pilot Station sonar passage estimates were inconclusive (Pfisterer 2002). Fall operations for drift gillnet test fishing in the Lower Yukon River were similar to trends observed in the sonar passage estimates obtained at Pilot Station. However, incorrect timing of drift fishing may cause failure of Middle Mouth to correlate with the other assessment projects in the Lower Yukon River during the summer season. We therefore recommend that the tidal surge timing in the Middle Mouth location be verified at the beginning of the 2002 season.

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Table 1. Catch data for the Lower Yukon River chinook salmon drift gillnet test fisheries, 2001.

	Middle Mouth Test Fish				Big Eddy Test Fish				Middle Mouth and Big Eddy Combined			
Date	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE
8-Jun	0	0.0	0.000	0.0	2	3.2	0.003	3	2	1.6	0.003	1.6
9-Jun	0	0.0	0.000	0.0	6	9.3	0.012	12	6	4.7	0.010	6.2
10-Jun	0	0.0	0.000	0.0	1	1.6	0.013	14	1	0.8	0.011	7.0
11-Jun	0	0.0	0.000	0.0	5	7.7	0.021	22	5	3.9	0.018	10.9
12-Jun	0	0.0	0.000	0.0	21	30.4	0.050	52	21	15.2	0.042	26.1
13-Jun	2	3.5	0.018	3.5	47	73.1	0.120	125	49	38.3	0.104	64.4
14-Jun	0	0.0	0.018	3.5	49	215.8	0.326	341	49	107.9	0.278	172.3
15-Jun	0	0.0	0.018	3.5	22	87.1	0.409	428	22	43.5	0.348	215.8
16-Jun	5	7.3	0.056	10.9	34	51.4	0.458	480	39	29.4	0.395	245.2
17-Jun	0	0.0	0.056	10.9	1	1.8	0.460	481	1	0.9	0.396	246.1
18-Jun	0	0.0	0.056	10.9	0	0.0	0.460	481	0	0.0	0.396	246.1
19-Jun	2	2.9	0.071	13.7	5	7.1	0.466	488	7	5.0	0.404	251.1
20-Jun	0	0.0	0.071	13.7	4	6.6	0.473	495	4	3.3	0.410	254.4
21-Jun	0	0.0	0.071	13.7	48	100.4	0.568	595	48	50.2	0.491	304.6
22-Jun	0	0.0	0.071	13.7	31	50.9	0.617	646	31	25.4	0.532	330.0
23-Jun	9	12.0	0.132	25.7	37	118.4	0.730	765	46	65.2	0.637	395.2
24-Jun	3	9.2	0.180	34.9	20	136.4	0.860	901	23	72.8	0.754	468.0
25-Jun	19	23.6	0.301	58.4	22	49.3	0.907	950	41	36.4	0.812	504.4
26-Jun	20	26.3	0.436	84.7	18	28.8	0.935	979	38	27.6	0.857	531.9
27-Jun	27	34.7	0.615	119.4	11	19.6	0.954	999	38	27.1	0.901	559.1
28-Jun	22	34.1	0.790	153.4	5	9.1	0.962	1,008	27	21.6	0.935	580.7
29-Jun	4	6.0	0.821	159.4	6	21.3	0.983	1,029	10	13.6	0.957	594.3
30-Jun	1	1.6	0.829	161.0	3	5.1	0.987	1,034	4	3.3	0.963	597.6
1-Jul	0	0.0	0.829	161.0	4	4.6	0.992	1,039	4	2.3	0.966	599.9
2-Jul	0	0.0	0.829	161.0	1	1.3	0.993	1,040	1	0.7	0.967	600.6
3-Jul	0	0.0	0.829	161.0	1	1.6	0.995	1,042	1	0.8	0.969	601.3
4-Jul	1	1.5	0.837	162.5	2	2.8	0.997	1,044	3	2.1	0.972	603.5
5-Jul	8	11.9	0.898	174.4	2	2.9	1.000	1,047	10	7.4	0.984	610.9
6-Jul	4	6.2	0.930	180.7	0	0.0	1.000	1,047	4	3.1	0.989	614.0
7-Jul	0	0.0	0.930	180.7	0	0.0	1.000	1,047	0	0.0	0.989	614.0
8-Jul	3	4.7	0.954	185.3	0	0.0	1.000	1,047	3	2.3	0.993	616.4
9-Jul	5	7.3	0.992	192.6	0	0.0	1.000	1,047	5	3.7	0.999	620.0
10-Jul	0	0.0	0.992	192.6	0	0.0	1.000	1,047	0	0.0	0.999	620.0
11-Jul	1	1.6	1.000	194.2	0	0.0	1.000	1,047	1	0.8	1.000	620.8
12-Jul	0	0.0	1.000	194.2	0	0.0	1.000	1,047	0	0.0	1.000	620.8
13-Jul	0	0.0	1.000	194.2	0	0.0	1.000	1,047	0	0.0	1.000	620.8
14-Jul	0	0.0	1.000	194.2	0	0.0	1.000	1,047	0	0.0	1.000	620.8
15-Jul	0	0.0	1.000	194.2	0	0.0	1.000	1,047	0	0.0	1.000	620.8
Total	136	194.2			408	1047.4			544	620.8		

Second and third quartiles in boxes with midpoint in bold.

Table 2. Chinook salmon age, sex, and length data for the Lower Yukon drift gillnet test fishery, 2001.

Big Eddy chinook salmon drift gillnet 8.25" test fish catch age and sex composition, and mean length (mm), 2001.

			Brood Year and (Age Group)													
			1997		1996		1995				1994					
	Sample		(1.2)		(1.3)		(1.4)		(2.3)		(1.5)		(2.4)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Seasonal Total	285	Males	5	1.8	39	13.7	94	33.0	1	0.4	15	5.3	1	0.3	155	54.4
		Females	0	0.0	6	2.1	106	37.2	0	0.0	15	5.2	3	1.1	130	45.6
		Total	5	1.8	45	15.8	200	70.2	1	0.4	30	10.5	4	1.4	285	100.0
Mean Length		Males	552.0		725.0		810.0		730.0		874.0		800.0			
Std. Error			18.0		8.0		6.0		0.0		12.0		0.0			
Mean Length		Females	0.0		787.0		835.0		0.0		874.0		827.0			
Std. Error			0.0		24.0		4.0		0.0		10.0		14.0			

Middle Mouth chinook salmon drift gillnet 8.25" test fish catch age and sex composition, and mean length (mm), 2001.

			Brood Year and (Age Group)													
			1997		1996		1995				1994					
	Sample		(1.2)		(1.3)		(1.4)		(2.3)		(1.5)		(2.4)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Seasonal Total	117	Males	1	0.9	15	12.8	36	30.8	0	0	1	0.8	0	0	53	45.3
		Females	0	0.0	5	4.3	54	46.1	0	0	5	4.3	0	0	64	54.7
		Total	1	0.9	20	17.1	90	76.9	0	0	6	5.1	0	0	117	100.0
Mean Length		Males	545.0		766.0		819.0		0		860.0		0			
Std. Error			0.0		13.0		8.0		0		0.0		0			
Mean Length		Females	0.0		817.0		852.0		0		889.0		0			
Std. Error			0.0		30.0		6.0		0		22.0		0			

Big Eddy and Middle Mouth chinook salmon drift gillnet 8.25" test fish catch age and sex composition combined,2001

			Brood Year and (Age Group)													
			1997		1996		1995				1994					
	Sample		(1.2)		(1.3)		(1.4)		(2.3)		(1.5)		(2.4)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Seasonal Total	402	Males	6	1.5	54	13.4	130	32.3	1	0.2	16	4.0	1	0.2	208	51.7
		Females	0	0.0	11	2.7	160	39.8	0	0.0	20	5.0	3	0.7	194	48.3
		Total	6	1.5	65	16.2	290	72.1	1	0.2	36	9.0	4	1.0	402	100.0

Table 3. Catch data for the Lower Yukon River summer chum salmon drift gillnet test fisheries, 2001.

	Middle Mouth Test Fish				Big Eddy Test Fish				Middle Mouth and Big Eddy Combined			
Date	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE
8-Jun			0.000				0.000				0.000	
9-Jun			0.000		1	2	0.001	2	1	1	0.000	1
10-Jun			0.000				0.001	2			0.000	1
11-Jun			0.000				0.001	2			0.000	1
12-Jun			0.000		3	5	0.002	6	3	2	0.002	3
13-Jun	1	2	0.003	2	41	67	0.025	74	42	35	0.021	38
14-Jun	1	2	0.006	4	162	400	0.160	474	163	201	0.132	239
15-Jun			0.006	4	41	174	0.219	647	41	87	0.181	326
16-Jun			0.006	4	43	82	0.247	729	43	41	0.203	366
17-Jun	7	12	0.024	16	34	54	0.265	783	41	33	0.222	399
18-Jun	5	8	0.036	24	20	25	0.274	808	25	16	0.231	416
19-Jun	1	1	0.038	24	8	17	0.279	825	9	9	0.236	425
20-Jun			0.038	24	10	16	0.285	841	10	8	0.240	433
21-Jun			0.038	24	83	156	0.338	997	83	78	0.283	511
22-Jun			0.038	24	83	128	0.381	1,125	83	64	0.319	575
23-Jun	10	15	0.061	40	116	296	0.481	1,421	126	156	0.405	730
24-Jun	9	29	0.105	68	59	455	0.635	1,876	68	242	0.540	972
25-Jun	90	111	0.276	180	110	167	0.692	2,042	200	139	0.617	1,111
26-Jun	18	27	0.317	206	108	201	0.760	2,244	126	114	0.680	1,225
27-Jun	63	89	0.455	295	151	356	0.880	2,599	214	222	0.803	1,447
28-Jun	121	157	0.696	452	38	78	0.907	2,678	159	118	0.869	1,565
29-Jun	2	3	0.700	455	14	23	0.915	2,701	16	13	0.876	1,578
30-Jun	1	2	0.703	457	85	121	0.956	2,823	86	61	0.910	1,640
1-Jul	2	3	0.707	460	25	40	0.969	2,863	27	22	0.922	1,661
2-Jul	1	2	0.710	461	11	17	0.975	2,879	12	9	0.927	1,670
3-Jul	10	15	0.733	477	11	17	0.981	2,897	21	16	0.936	1,687
4-Jul	19	29	0.778	506	18	26	0.990	2,923	37	28	0.951	1,714
5-Jul	26	38	0.836	544	2	9	0.993	2,932	28	24	0.965	1,738
6-Jul	6	10	0.851	553	7	9	0.996	2,941	13	9	0.970	1,747
7-Jul	16	46	0.922	599	1	3	0.997	2,944	17	24	0.983	1,771
8-Jul	21	30	0.968	629	5	8	0.999	2,952	26	19	0.994	1,791
9-Jul	10	14	0.990	644			0.999	2,952	10	7	0.998	1,798
10-Jul	3	5	0.998	648			0.999	2,952	3	2	0.999	1,800
11-Jul			0.998	648	1	2	1.000	2,953	1	1	1.000	1,801
12-Jul	1	2	1.000	650			1.000	2,953	1	1	1.000	1,802
13-Jul			1.000	650			1.000	2,953			1.000	1,802
14-Jul			1.000	650			1.000	2,953			1.000	1,802
15-Jul			1.000	650			1.000	2,953			1.000	1,802
Total	444	650			1,291	2,953			1,735	1,802		

Second and third quartiles in boxes with midpoint in bold.

Table 4. Summer chum salmon age, sex and length data for the Lower Yukon drift gillnet test fishery, 2001.

Big Eddy summer chum salmon 5.5" drift gillnet test fishing catch age and sex composition, and mean length (mm), 2001.

			Brood Year and (Age Group)							
			1997		1996		1995			
Sample	Sample		(0.3)		(0.4)		(0.5)		Total	
Dates	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	538	Males	53	9.8	139	25.8	5	0.9	197	36.6
		Females	93	17.3	245	45.6	3	0.6	341	63.4
		Total	146	27.1	384	71.4	8	1.5	538	100.0
Mean Length		Males	568.0		588.0		593.0			
Std. Error			4.0		2.0		19.0			
Mean Length		Females	557.0		571.0		565.0			
Std. Error			2.0		2.0		15.0			

Middle mouth summer chum salmon 5.5" drift gillnet test fishing catch age and sex composition, and mean length (mm), 2001.

			Brood Year and (Age Group)							
			1997		1996		1995			
	Sample		(0.3)		(0.4)		(0.5)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	200	Males	13	6.5	50	25.0	0	0.0	63	31.5
		Females	23	11.5	113	56.5	1	0.5	137	68.5
		Total	36	18.0	163	81.5	1	0.5	200	100.0
Mean Length		Males	557.0		593.0		0.0			
Std. Error			7.0		5.0		0.0			
Mean Length		Females	557.0		582.0		625.0			
Std. Error			5.0		2.0		0.0			

Middle Mouth and Big Eddy summer chum salmon 5.5" drift gillnet test fishing catch age and sex composition combined, 2001.

			Brood Year and (Age Group)							
			1997		1996		1995			
	Sample		(0.3)		(0.4)		(0.5)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	738	Males	66	8.9	189	25.6	5	0.7	260	35.2
		Females	116	15.7	358	48.5	4	0.5	478	64.8
		Total	182	24.7	547	74.1	9	1.2	738	100.0

Table 5. Catch data for the Lower Yukon River fall chum salmon drift gillnet test fisheries, 2001.

	Middle Mouth Test Fishery				Big Eddy Test Fishery				Middle Mouth and Big Eddy Combined			
Date	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE
16-Jul	3	4.9	0.003	4.9	26	37.6	0.032	37.6	29	21.3	0.016	21.3
17-Jul	87	127.6	0.089	132.6	105	171.7	0.179	209.3	192	149.7	0.129	170.9
18-Jul	131	206.2	0.229	338.7	52	72.2	0.240	281.6	183	139.2	0.234	310.1
19-Jul	27	38.7	0.255	377.4	11	16.1	0.254	297.6	38	27.4	0.254	337.5
20-Jul	2	3.0	0.257	380.4	0	0.0	0.254	297.6	2	1.5	0.256	339.0
21-Jul	4	6.0	0.261	386.4	0	0.0	0.254	297.6	4	3.0	0.258	342.0
22-Jul	3	4.5	0.264	390.9	5	8.1	0.261	305.7	8	6.3	0.263	348.3
23-Jul	8	21.8	0.279	412.7	27	79.5	0.329	385.2	35	50.6	0.301	399.0
24-Jul	60	93.7	0.342	506.5	23	36.0	0.360	421.2	83	64.9	0.350	463.8
25-Jul	36	59.9	0.382	566.4	2	3.0	0.362	424.2	38	31.4	0.373	495.3
26-Jul	5	7.0	0.387	573.4	1	1.5	0.363	425.7	6	4.3	0.377	499.5
27-Jul	3	4.7	0.390	578.0	12	18.0	0.379	443.7	15	11.3	0.385	510.8
28-Jul	1	1.6	0.391	579.6	5	7.7	0.385	451.3	6	4.6	0.389	515.5
29-Jul	1	1.5	0.392	581.1	0	0.0	0.385	451.3	1	0.8	0.389	516.2
30-Jul	2	3.1	0.394	584.2	8	12.0	0.396	463.3	10	7.5	0.395	523.8
31-Jul	68	110.5	0.469	694.7	51	80.1	0.464	543.4	119	95.3	0.467	619.1
1-Aug	50	78.5	0.522	773.2	5	7.8	0.471	551.2	55	43.1	0.499	662.2
2-Aug	53	76.3	0.573	849.4	113	151.9	0.600	703.1	166	114.1	0.585	776.3
3-Aug	101	139.1	0.667	988.6	48	64.6	0.655	767.7	149	101.9	0.662	878.1
4-Aug	17	26.3	0.685	1014.9	13	18.8	0.671	786.5	30	22.6	0.679	900.7
5-Aug	1	1.6	0.686	1016.5	9	12.4	0.682	798.9	10	7.0	0.684	907.7
6-Aug	11	30.8	0.707	1047.3	76	170.7	0.828	969.6	87	100.7	0.760	1008.4
7-Aug	142	173.1	0.824	1220.3	83	100.5	0.914	1070.1	225	136.8	0.863	1145.2
8-Aug	41	62.9	0.866	1283.3	1	2.2	0.915	1072.3	42	32.6	0.888	1177.8
9-Aug	20	27.1	0.885	1310.3	8	11.8	0.926	1084.1	28	19.4	0.903	1197.2
10-Aug	14	8.2	0.890	1318.5	6	24.3	0.946	1108.3	20	16.2	0.915	1213.4
11-Aug	3	4.5	0.893	1323.0	1	1.4	0.947	1109.7	4	2.9	0.917	1216.3
12-Aug	17	24.0	0.909	1347.0	18	28.4	0.972	1138.1	35	26.2	0.937	1242.6
13-Aug	36	50.5	0.943	1397.5	3	3.6	0.975	1141.7	39	27.1	0.957	1269.6
14-Aug	23	33.0	0.966	1430.5	1	1.5	0.976	1143.2	24	17.3	0.970	1286.9
15-Aug	15	22.5	0.981	1453.0	0	0.0	0.976	1143.2	15	11.2	0.979	1298.1
16-Aug	5	7.5	0.986	1460.5	0	0.0	0.976	1143.2	5	3.8	0.982	1301.9
17-Aug	1	1.5	0.987	1462.0	1	1.6	0.977	1144.8	2	1.6	0.983	1303.4
18-Aug	3	4.6	0.990	1466.6	0	0.0	0.977	1144.8	3	2.3	0.984	1305.7
19-Aug	0	0.0	0.990	1466.6	0	0.0	0.977	1144.8	0	0.0	0.984	1305.7
20-Aug	1	1.6	0.991	1468.2	1	3.1	0.980	1147.9	2	2.3	0.986	1308.0
21-Aug	4	5.7	0.995	1473.9	15	22.0	0.999	1169.8	19	13.8	0.997	1321.9
22-Aug	4	6.0	0.999	1479.9	1	1.5	1.000	1171.3	5	3.8	0.999	1325.6
23-Aug	0	0.0	0.999	1479.9	0	0.0	1.000	1171.3	0	0.0	0.999	1325.6
24-Aug	1	1.5	1.000	1481.4	0	0.0	1.000	1171.3	1	0.8	1.000	1326.4
25-Aug	0	0.0	1.000	1481.4	0	0.0	1.000	1171.3	0	0.0	1.000	1326.4
26-Aug	0	0.0	1.000	1481.4	0	0.0	1.000	1171.3	0	0.0	1.000	1326.4
27-Aug	0	0.0	1.000	1481.4	0	0.0	1.000	1171.3	0	0.0	1.000	1326.4
28-Aug	0	0.0	1.000	1481.4	0	0.0	1.000	1171.3	0	0.0	1.000	1326.4
Total	1,004	1481.4			731	1171.3			1,735	1326.4		

Second and third quartiles in boxes with midpoint in bold.

Table 6. Fall chum salmon age, sex, and length data for the Lower Yukon drift gillnet test fishery , 2001.

Big Eddy fall chum salmon 6.0 "drift gillnet test fishing catch age and sex composition by stratum, and mean length (mm), 2001.

			Brood Year and (Age Group)									
			1998		1997		1996		1995			
	Sample		(0.2)		(0.3)		(0.4)		(0.5)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	332	Males	0	0.0	96	28.9	39	11.7	0	0.0	135	40.7
		Females	1	0.3	140	42.2	56	16.9	0	0.0	197	59.3
		Total	1	0.3	236	71.1	95	28.6	0	0.0	332	100.0
Mean Length		Males	0.0		605.0		625.0		0.0			
Std. Error			0.0		3.0		5.0		0.0			
Mean Length		Females	580.0		591.0		615.0		0.0			
Std. Error			0.0		2.0		4.0		0.0			

Middle Mouth fall chum salmon 6.0" drift gillnet test fishing catch age and sex composition by stratum, and mean length (mm), 2001.

			Brood Year and (Age Group)									
			1998		1997		1996		1995			
	Sample		(0.2)		(0.3)		(0.4)		(0.5)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	502	Males	1	0.2	121	24.1	74	14.8	1	0.2	197	39.2
		Females	1	0.2	196	39.0	108	21.5	0	0.0	305	60.8
		Total	2	0.4	317	63.1	182	36.3	1	0.2	502	100.0
Mean Length		Males	545.0		601.0		617.0		640.0			
Std. Error			0.0		3.0		4.0		0.0			
Mean Length		Females	575.0		592.0		609.0		0.0			
Std. Error			0.0		2.0		3.0		0.0			

Middle Mouth and Big Eddy fall chum salmon 6.0" drift gillnet test fishing catch age and sex composition combined, 2001.

			Brood Year and (Age Group)									
			1998		1997		1996		1995			
	Sample		(0.2)		(0.3)		(0.4)		(0.5)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	834	Males	1	0.1	217	26.0	113	13.5	1	0.1	332	39.8
		Females	2	0.2	336	40.3	164	19.7	0	0.0	502	60.2
		Total	3	0.4	553	66.3	277	33.2	1	0.1	834	100.0

Table 7. Catch data for the Lower Yukon River coho salmon drift gillnet test fisheries, 2001.

	Middle Mouth Test Fishery				Big Eddy Test Fishery				Middle Mouth and Big Eddy Combined			
Date	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE
16-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
17-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
18-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
19-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
20-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
21-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
22-Jul	0	0.0	0.000	0.0	0	0.0	0.000	0.0	0	0.0	0.000	0.0
23-Jul	0	0.0	0.000	0.0	1	3.0	0.011	3.0	1	1.5	0.004	1.5
24-Jul	1	1.8	0.003	1.8	0	0.0	0.011	3.0	1	0.9	0.006	2.4
25-Jul	0	0.0	0.003	1.8	0	0.0	0.011	3.0	0	0.0	0.006	2.4
26-Jul	0	0.0	0.003	1.8	0	0.0	0.011	3.0	0	0.0	0.006	2.4
27-Jul	0	0.0	0.003	1.8	1	1.5	0.016	4.5	1	0.8	0.008	3.1
28-Jul	0	0.0	0.003	1.8	0	0.0	0.016	4.5	0	0.0	0.008	3.1
29-Jul	0	0.0	0.003	1.8	0	0.0	0.016	4.5	0	0.0	0.008	3.1
30-Jul	0	0.0	0.003	1.8	1	1.5	0.022	6.0	1	0.8	0.010	3.9
31-Jul	1	1.4	0.006	3.2	3	4.7	0.039	10.7	4	3.1	0.018	6.9
1-Aug	0	0.0	0.006	3.2	0	0.0	0.039	10.7	0	0.0	0.018	6.9
2-Aug	3	4.4	0.015	7.6	4	5.3	0.059	16.0	7	4.9	0.030	11.8
3-Aug	10	13.8	0.041	21.4	9	12.8	0.106	28.8	19	13.3	0.064	25.1
4-Aug	8	12.4	0.065	33.7	5	7.3	0.132	36.1	13	9.8	0.089	34.9
5-Aug	1	1.6	0.068	35.3	7	9.8	0.168	46.0	8	5.7	0.103	40.6
6-Aug	2	19.2	0.106	54.5	8	16.8	0.230	62.8	10	18.0	0.149	58.6
7-Aug	28	36.2	0.176	90.7	42	64.6	0.467	127.4	70	50.4	0.276	109.0
8-Aug	20	30.3	0.234	121.0	6	13.3	0.516	140.7	26	21.8	0.332	130.8
9-Aug	7	16.4	0.266	137.3	8	11.8	0.559	152.5	15	14.1	0.367	144.9
10-Aug	27	26.6	0.318	164.0	19	28.9	0.665	181.4	46	27.8	0.438	172.7
11-Aug	14	20.9	0.358	184.8	7	10.0	0.701	191.3	21	15.4	0.477	188.1
12-Aug	14	19.7	0.396	204.6	24	37.5	0.839	228.8	38	28.6	0.549	216.7
13-Aug	41	58.9	0.511	263.5	2	4.1	0.854	232.9	43	31.5	0.629	248.2
14-Aug	35	50.4	0.608	313.9	4	6.1	0.876	239.0	39	28.2	0.701	276.4
15-Aug	44	65.5	0.735	379.4	2	3.0	0.887	242.0	46	34.3	0.788	310.7
16-Aug	16	24.1	0.782	403.5	2	3.0	0.898	245.1	18	13.6	0.822	324.3
17-Aug	14	22.3	0.825	425.8	0	0.0	0.898	245.1	14	11.1	0.850	335.4
18-Aug	8	12.3	0.849	438.0	4	6.2	0.921	251.3	12	9.2	0.874	344.6
19-Aug	18	31.2	0.909	469.2	0	0.0	0.921	251.3	18	15.6	0.913	360.2
20-Aug	3	4.7	0.918	473.9	0	0.0	0.921	251.3	3	2.4	0.919	362.6
21-Aug	8	11.4	0.940	485.3	8	11.1	0.962	262.4	16	11.3	0.948	373.9
22-Aug	13	20.1	0.979	505.4	6	8.9	0.995	271.3	19	14.5	0.985	388.4
23-Aug	2	3.1	0.985	508.5	0	0.0	0.995	271.3	2	1.5	0.988	389.9
24-Aug	3	4.6	0.994	513.1	0	0.0	0.995	271.3	3	2.3	0.994	392.2
25-Aug	0	0.0	0.994	513.1	0	0.0	0.995	271.3	0	0.0	0.994	392.2
26-Aug	2	2.9	1.000	516.0	0	0.0	0.995	271.3	2	1.5	0.998	393.7
27-Aug	0	0.0	1.000	516.0	0	0.0	0.995	271.3	0	0.0	0.998	393.7
28-Aug	2	0.1	1.000	516.1	1	1.5	1.000	272.8	3	0.8	1.000	394.5
Total	345	516.1			174	272.8			519	394.5		

Second and third quartiles in boxes with midpoint in bold.

Table 8. Coho salmon age, sex and length data for the Lower Yukon drift gillnet test fishery , 2001.

Big Eddy coho salmon 6.0" drift gillnet test fishing catch age and sex composition by stratum, and mean length (mm), 2001.

			Brood Year and (Age Group)									
			1998		1997		1996					
	Sample		(1.1)		(2.1)		(2.2)		(3.1)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	130	Males	9	6.9	57	43.8	2	1.5	1	0.8	69	53.1
		Females	7	5.4	52	40.0	1	0.8	1	0.7	61	46.9
		Total	16	12.3	109	83.8	3	2.3	2	1.5	130	100.0
Mean Length		Males	598.0		588.0		573.0		600.0			
Std. Error			12.0		0.0		43.0		0.0			
Mean Length		Females	602.0		595.0		580.0		540.0			
Std. Error			7.0		0.0		0.0		0.0			

Middle Mouth coho salmon 6.0" drift gillnet test fishing age and sex composition by stratum, and length (mm), 2001.

			Brood Year and (Age Group)									
			1998		1997		1996					
	Sample		(1.1)		(2.1)		(2.2)		(3.1)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	252	Males	17	6.7	91	36.1	2	0.8	1	0.4	111	44.0
		Females	9	3.6	125	49.6	2	0.8	5	2.0	141	56.0
		Total	26	10.3	216	85.7	4	1.6	6	2.4	252	100.0
Mean Length		Males	584.0		583.0		585.0		610.0			
Std. Error			9.0		4.0		0.0		0.0			
Mean Length		Females	594.0		593.0		603.0		571.0			
Std. Error			5.0		2.0		8.0		4.0			

Big Eddy and Middle Mouth coho salmon 6.0" drift gillnet test fishing age and sex composition combined (mm), 2001.

			Brood Year and (Age Group)									
			1998		1997		1996					
	Sample		(1.1)		(2.1)		(2.2)		(3.1)		Total	
	Size		No.	Per.	No.	Per.	No.	Per.	No.	Per.	No.	Per.
Season Total	382	Males	26	6.8	148	38.7	4	1.0	2	0.5	180	47.1
		Females	16	4.2	177	46.3	3	0.8	6	1.6	202	52.9
		Total	42	11.0	325	85.1	7	1.8	8	2.1	382	100.0

Table 9. Pilot Station summer season sonar passage estimates, 2001.

Date	Chinook			Summer Chum		
	Daily	Cumulative	prop.	Daily	Cumulative	prop.
11-Jun	1,137	1,137	0.008			0.000
12-Jun	1,354	2,491	0.018			0.000
13-Jun	2,564	5,055	0.036	135	135	0.000
14-Jun	2,711	7,766	0.056	160	295	0.001
15-Jun	2,293	10,059	0.072	717	1,012	0.002
16-Jun	4,086	14,145	0.101	1,252	2,264	0.005
17-Jun	4,985	19,130	0.137	6,952	9,216	0.021
18-Jun	7,268	26,398	0.189	10,097	19,313	0.044
19-Jun	5,220	31,618	0.226	18,026	37,339	0.086
20-Jun	7,420	39,038	0.279	22,868	60,207	0.138
21-Jun	3,971	43,009	0.307	17,659	77,866	0.179
22-Jun	2,570	45,579	0.326	10,952	88,818	0.204
23-Jun	4,150	49,729	0.355	8,168	96,986	0.223
24-Jun	1,999	51,728	0.370	13,268	110,254	0.253
25-Jun	4,335	56,063	0.401	15,865	126,119	0.290
26-Jun	6,300	62,363	0.446	21,599	147,718	0.339
27-Jun	11,210	73,573	0.526	32,379	180,097	0.414
28-Jun	8,695	82,268	0.588	28,394	208,491	0.479
29-Jun	9,532	91,800	0.656	26,998	235,489	0.541
30-Jun	3,841	95,641	0.684	24,040	259,529	0.596
1-Jul	3,445	99,086	0.708	20,904	280,433	0.644
2-Jul	4,151	103,237	0.738	10,691	291,124	0.669
3-Jul	5,584	108,821	0.778	7,586	298,710	0.686
4-Jul	5,266	114,087	0.815	7,491	306,201	0.704
5-Jul	4,210	118,297	0.845	9,709	315,910	0.726
6-Jul	6,990	125,287	0.895	7,219	323,129	0.742
7-Jul	2,855	128,142	0.916	16,522	339,651	0.780
8-Jul	2,640	130,782	0.935	18,080	357,731	0.822
9-Jul	2,036	132,818	0.949	15,851	373,582	0.858
10-Jul	1,375	134,193	0.959	12,655	386,237	0.887
11-Jul	1,202	135,395	0.968	10,963	397,200	0.913
12-Jul	860	136,255	0.974	7,294	404,494	0.929
13-Jul	795	137,050	0.979	6,442	410,936	0.944
14-Jul	613	137,663	0.984	5,654	416,590	0.957
15-Jul	599	138,262	0.988	5,482	422,072	0.970
16-Jul	553	138,815	0.992	5,006	427,078	0.981
17-Jul	463	139,278	0.995	3,819	430,897	0.990
18-Jul	645	139,923	1.000	4,327	435,224	1.000
Total	139,923			435,224		

Second and third quartiles in boxes with midpoint in bold.

Table 10. Catch data for the Lower Yukon River chinook salmon 8.5" set gillnet test fisheries. 2001.

Date	Daily Catch	Daily CPUE	Prop.	Cumulative CPUE
8-Jun	9	0.1	0.006	0.1
9-Jun	18	0.2	0.018	0.3
10-Jun	11	0.1	0.026	0.4
11-Jun	21	0.2	0.040	0.6
12-Jun	31	0.3	0.061	0.9
13-Jun	49	0.5	0.095	1.4
14-Jun	70	0.7	0.142	2.2
15-Jun	31	0.3	0.163	2.5
16-Jun	36	0.4	0.188	2.9
17-Jun	30	0.3	0.209	3.2
18-Jun	13	0.1	0.218	3.3
19-Jun	16	0.2	0.229	3.5
20-Jun	16	0.2	0.240	3.7
21-Jun	58	0.6	0.280	4.3
22-Jun	40	0.4	0.307	4.7
23-Jun	88	0.9	0.368	5.6
24-Jun	128	1.3	0.455	6.9
25-Jun	134	1.4	0.547	8.3
26-Jun	103	1.1	0.617	9.4
27-Jun	122	1.3	0.701	10.7
28-Jun	64	0.7	0.745	11.3
29-Jun	36	0.4	0.770	11.7
30-Jun	22	0.2	0.785	12.0
1-Jul	30	0.3	0.805	12.3
2-Jul	32	0.3	0.827	12.6
3-Jul	29	0.3	0.846	12.9
4-Jul	36	0.4	0.871	13.3
5-Jul	46	0.5	0.903	13.8
6-Jul	36	0.4	0.928	14.1
7-Jul	34	0.4	0.951	14.5
8-Jul	20	0.2	0.965	14.7
9-Jul	19	0.2	0.978	14.9
10-Jul	11	0.1	0.985	15.0
11-Jul	8	0.1	0.990	15.1
12-Jul	4	0.0	0.993	15.1
13-Jul	4	0.0	0.995	15.2
14-Jul	3	0.0	0.997	15.2
15-Jul	4	0.0	1.000	15.2
Total	1,462	15.2		

Reported numbers are combined catch from all Lower Yukon set gillnet test fisheries.

Table 11. Pilot Station fall season sonar passage estimates, 2001.

Date	Fall Chum			Coho		
	Daily	Cumulative	Prop.	Daily	Cumulative	Prop.
19-Jul	18,964	18,964	0.053			0.000
20-Jul	36,988	55,952	0.155			0.000
21-Jul	29,306	85,258	0.237			0.000
22-Jul	10,843	96,101	0.267			0.000
23-Jul	5,310	101,411	0.281			0.000
24-Jul	4,999	106,410	0.295	75	75	0.001
25-Jul	6,960	113,370	0.315	111	186	0.001
26-Jul	15,511	128,881	0.358		186	0.001
27-Jul	13,488	142,369	0.395	343	529	0.004
28-Jul	6,007	148,376	0.412	136	665	0.005
29-Jul	3,804	152,180	0.422	90	755	0.005
30-Jul	4,119	156,299	0.434	101	856	0.006
31-Jul	4,428	160,727	0.446	99	955	0.007
1-Aug	2,793	163,520	0.454	74	1,029	0.007
2-Aug	9,831	173,351	0.481	58	1,087	0.008
3-Aug	14,498	187,849	0.521	620	1,707	0.012
4-Aug	12,319	200,168	0.555	668	2,375	0.017
5-Aug	20,259	220,427	0.612	345	2,720	0.019
6-Aug	11,177	231,604	0.643	3,798	6,518	0.046
7-Aug	7,155	238,759	0.663	2,353	8,871	0.062
8-Aug	8,080	246,839	0.685	3,147	12,018	0.084
9-Aug	21,808	268,647	0.746	6,225	18,243	0.127
10-Aug	8,975	277,622	0.770	7,323	25,566	0.179
11-Aug	6,781	284,403	0.789	5,898	31,464	0.220
12-Aug	8,536	292,939	0.813	6,095	37,559	0.262
13-Aug	8,730	301,669	0.837	6,438	43,997	0.307
14-Aug	5,008	306,677	0.851	10,166	54,163	0.378
15-Aug	9,012	315,689	0.876	9,078	63,241	0.442
16-Aug	7,422	323,111	0.897	9,977	73,218	0.511
17-Aug	3,952	327,063	0.908	7,193	80,411	0.561
18-Aug	3,124	330,187	0.916	7,031	87,442	0.611
19-Aug	2,573	332,760	0.923	3,676	91,118	0.636
20-Aug	2,936	335,696	0.932	4,127	95,245	0.665
21-Aug	3,888	339,584	0.942	6,512	101,757	0.711
22-Aug	3,079	342,663	0.951	5,296	107,053	0.748
23-Aug	2,676	345,339	0.958	4,361	111,414	0.778
24-Aug	4,866	350,205	0.972	5,619	117,033	0.817
25-Aug	4,420	354,625	0.984	5,258	122,291	0.854
26-Aug	1,406	356,031	0.988	6,601	128,892	0.900
27-Aug	460	356,491	0.989	4,949	133,841	0.935
28-Aug	109	356,600	0.990	2,265	136,106	0.950
29-Aug	66	356,666	0.990	1,397	137,503	0.960
30-Aug	1,903	358,569	0.995	2,842	140,345	0.980
31-Aug	1,787	360,356	1.000	2,868	143,213	1.000
Total	360,356			143,213		

Second and third quartiles in boxes with midpoint in bold.

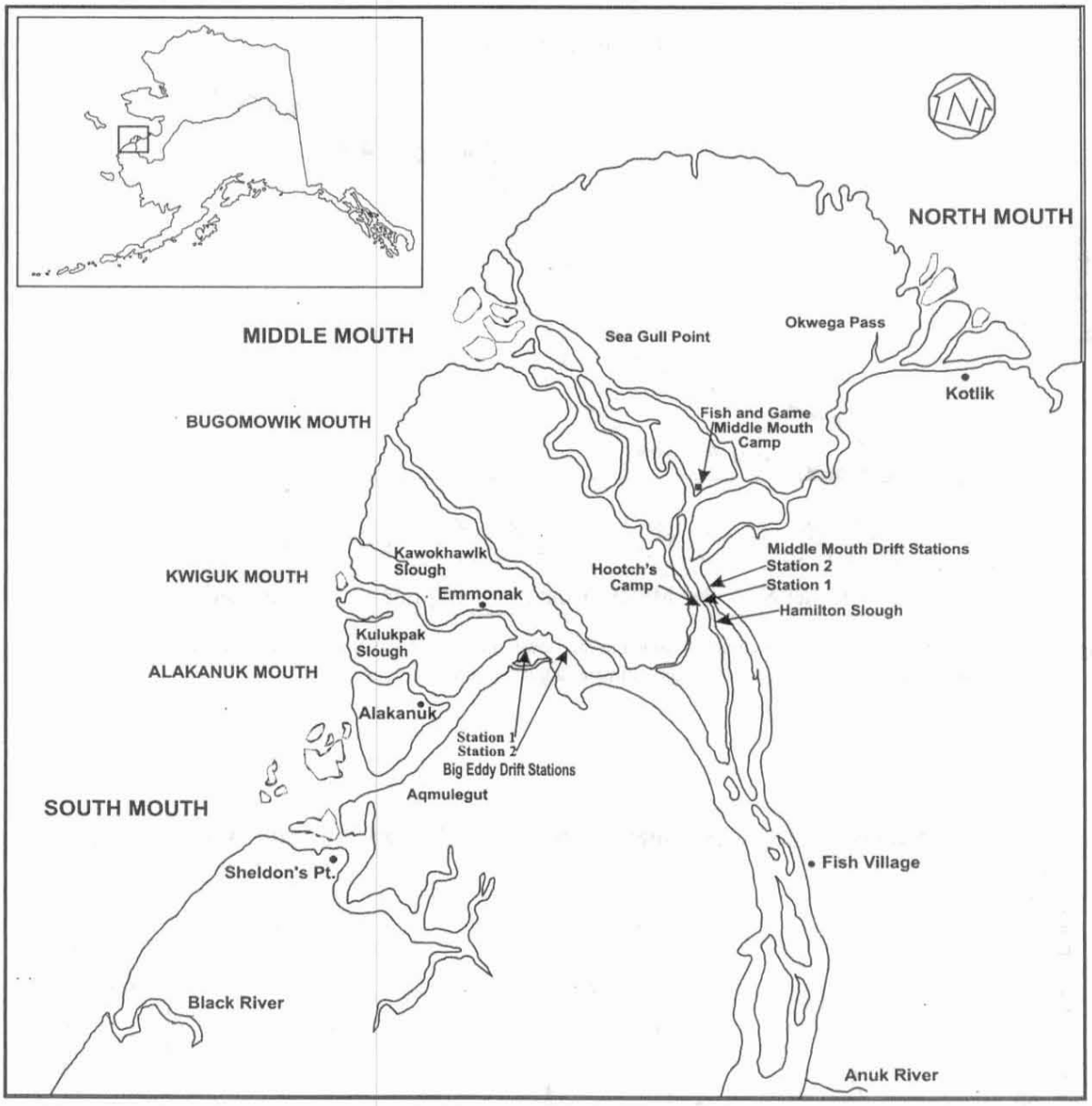

Figure 1. Drift stations for the Lower Yukon drift gillnet test fishery, 2001.

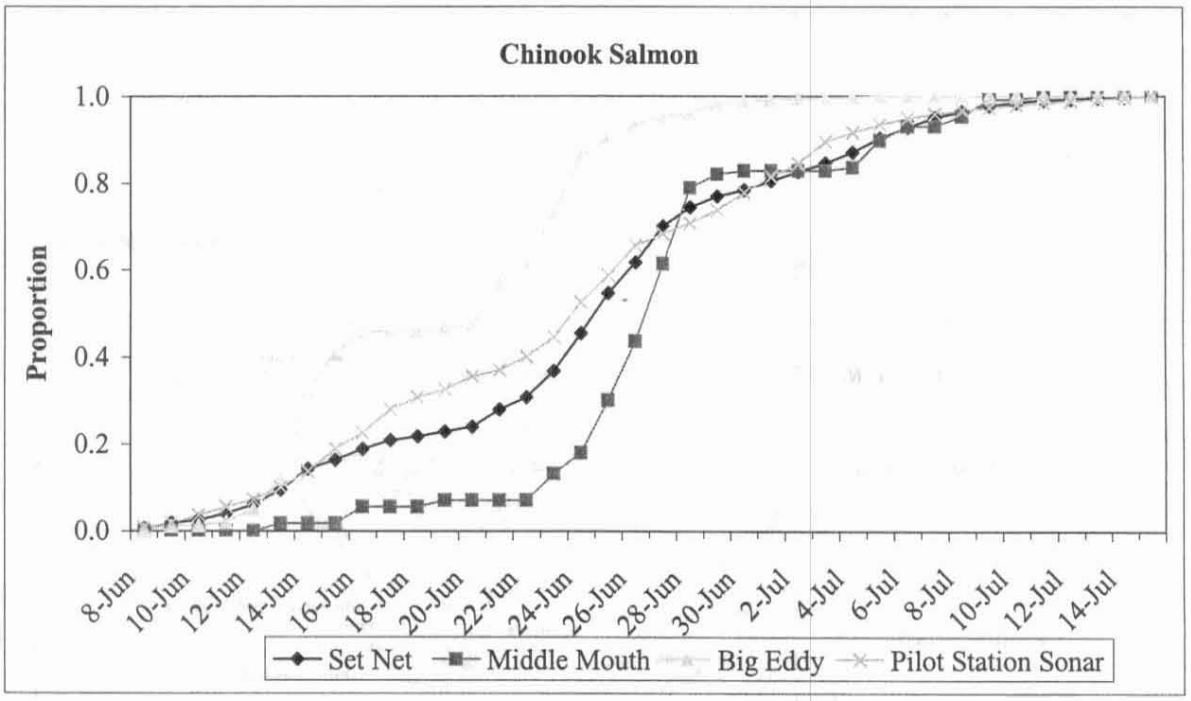

Figure 2. Cumulative proportions for chinook salmon in the Lower Yukon set and drift gillnet test fisheries compared to Pilot Station sonar passage estimates adjusted for transit time, 2001.

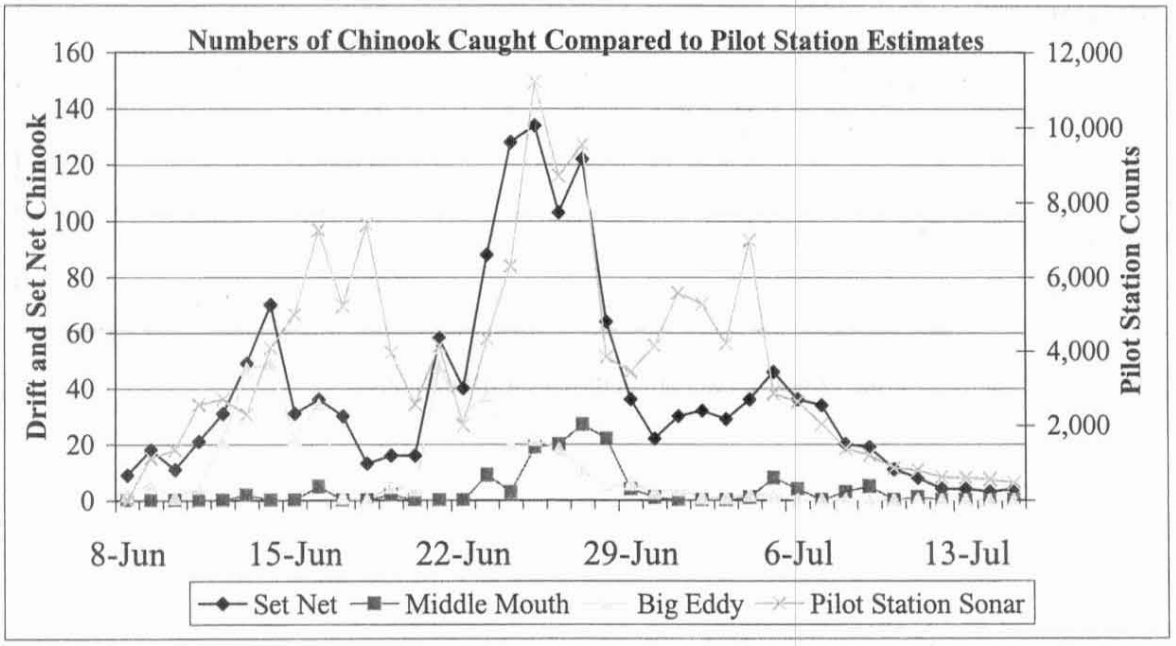

Figure 3. Chinook salmon caught by the Lower Yukon 8.25" drift gillnet and 8.5" set gillnet test fisheries compared to Pilot Station sonar passage estimates corrected for transit time, 2001.

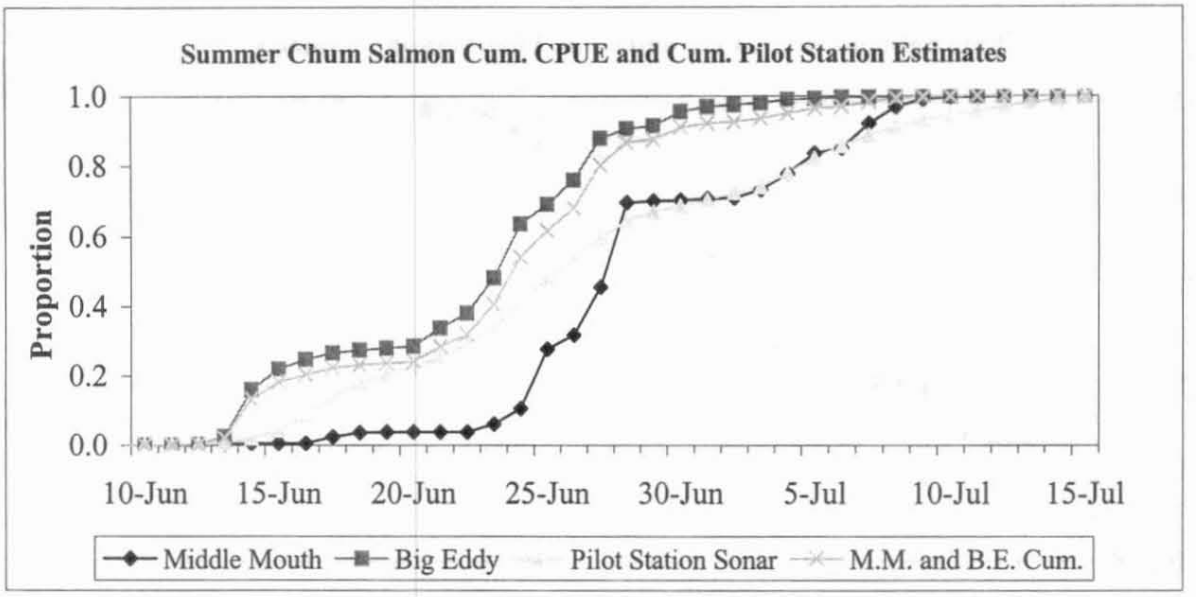

Figure 4. Cumulative total CPUE for the Lower Yukon 5.5" summer chum drift gillnet test fishery compared to Pilot Station cumulative summer chum salmon sonar passage estimates adjusted for transit time, 2001.

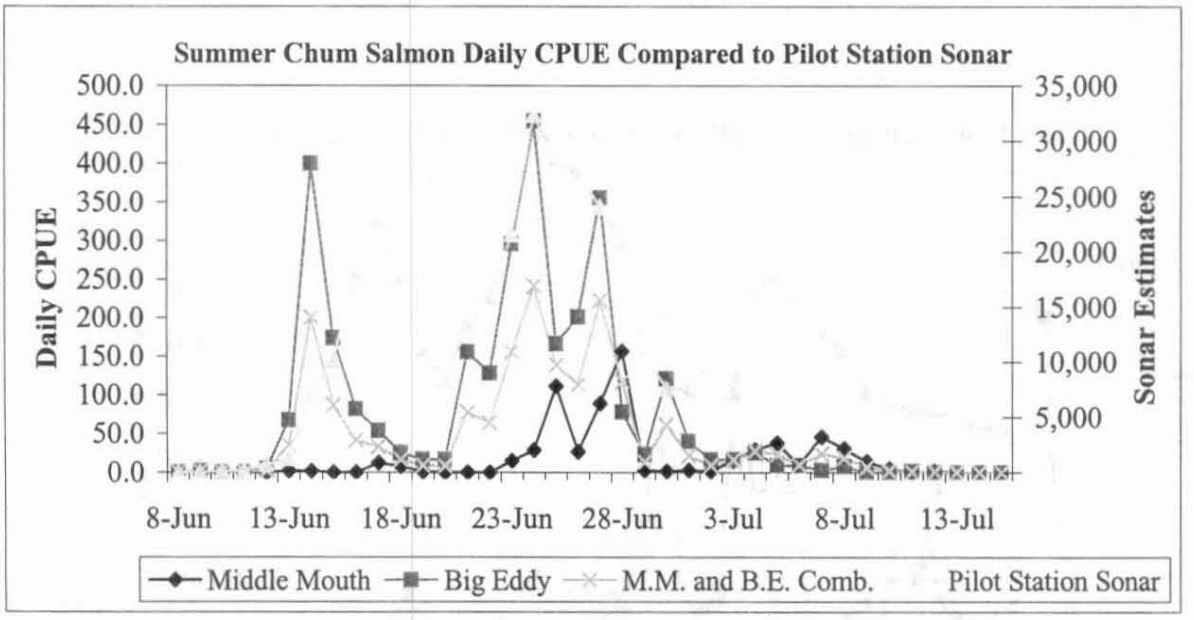

Figure 5. Daily CPUE for the Lower Yukon 5.5" drift gillnet summer chum salmon test fishery compared to Pilot Station summer chum sonar passage estimates adjusted for transit time, 2001.

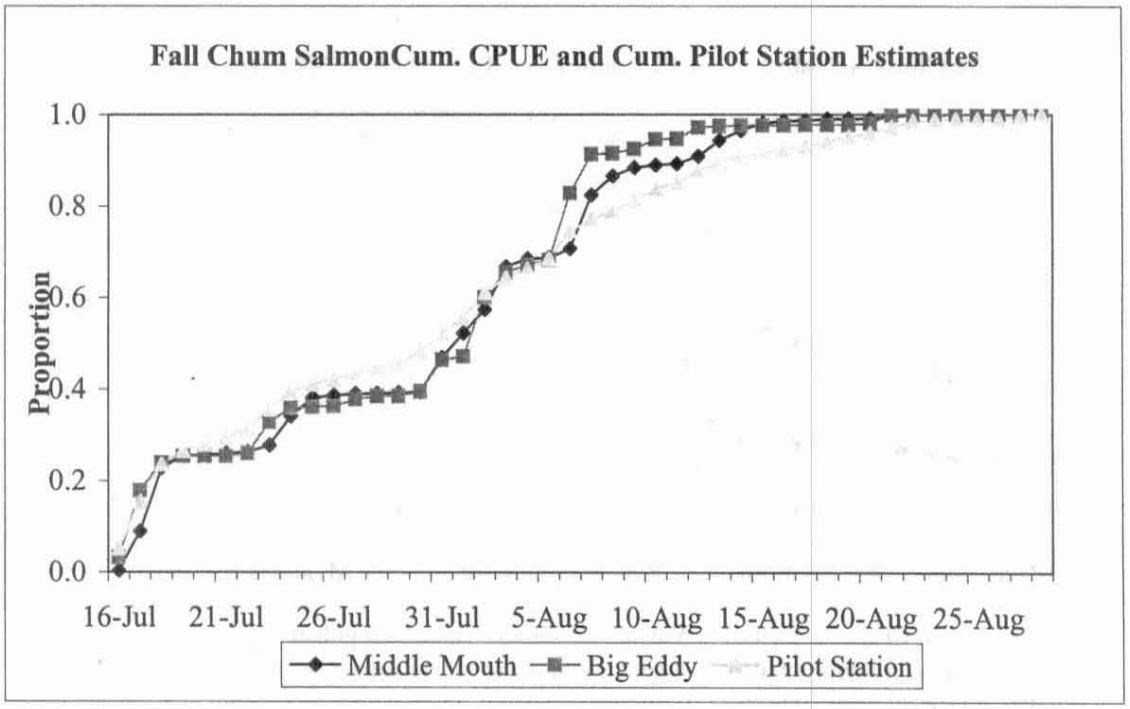

Figure 6. Cumulative CPUE for the Lower Yukon 6" fall chum salmon drift gillnet test fishery compared to the cumulative total of fall chums for Pilot Station sonar estimates adjusted for transit time, 2001.

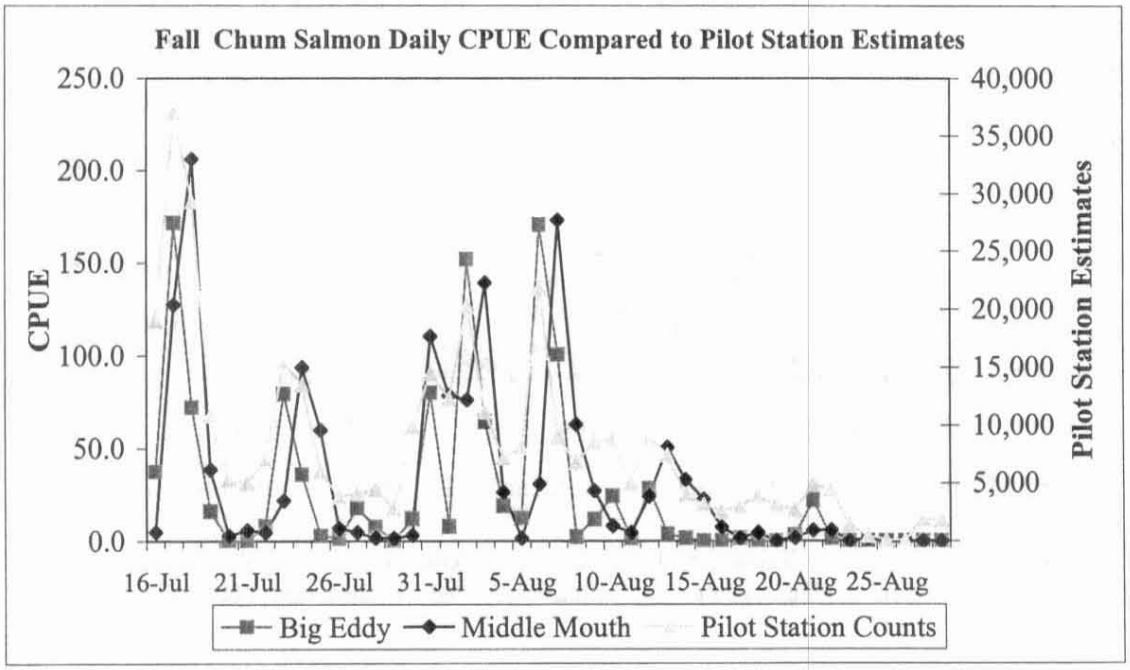

Figure 7 Daily CPUE for the Lower Yukon 6.0" fall chum salmon drift gillnet test fishery compared to Pilot Station fall chum passage estimates adjusted for transit time, 2001.

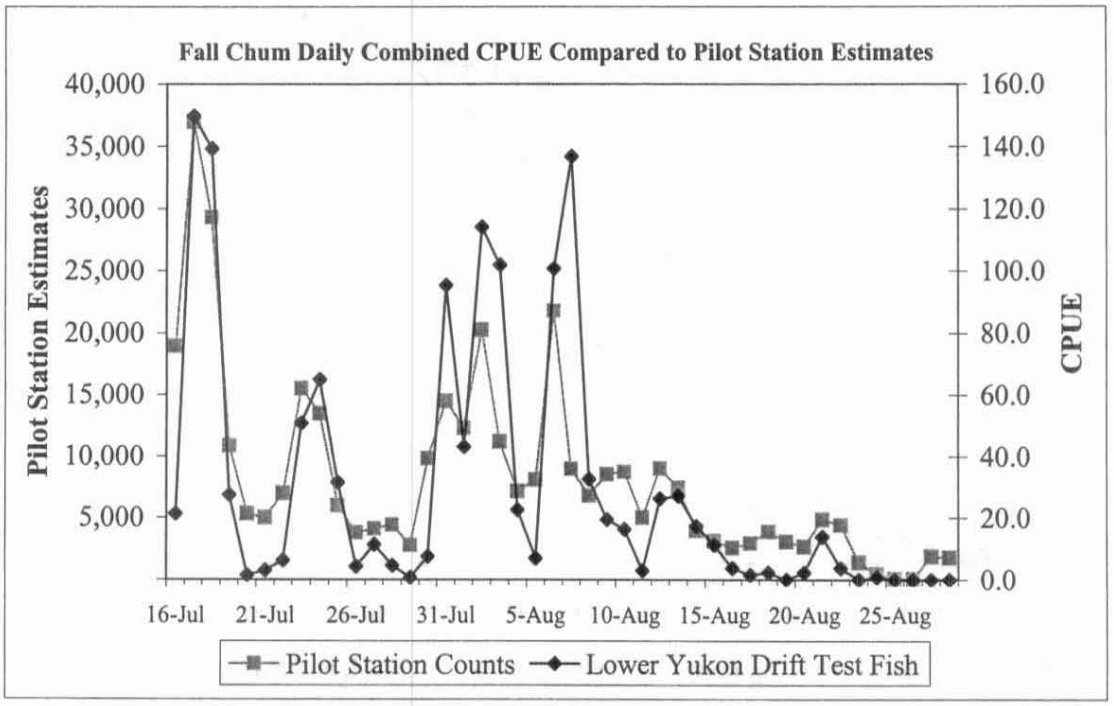

Figure 8. Lower Yukon fall chum salmon drift test fisheries combined daily CPUE compared to Pilot Station sonar passage estimates adjusted for transit time, 2001.

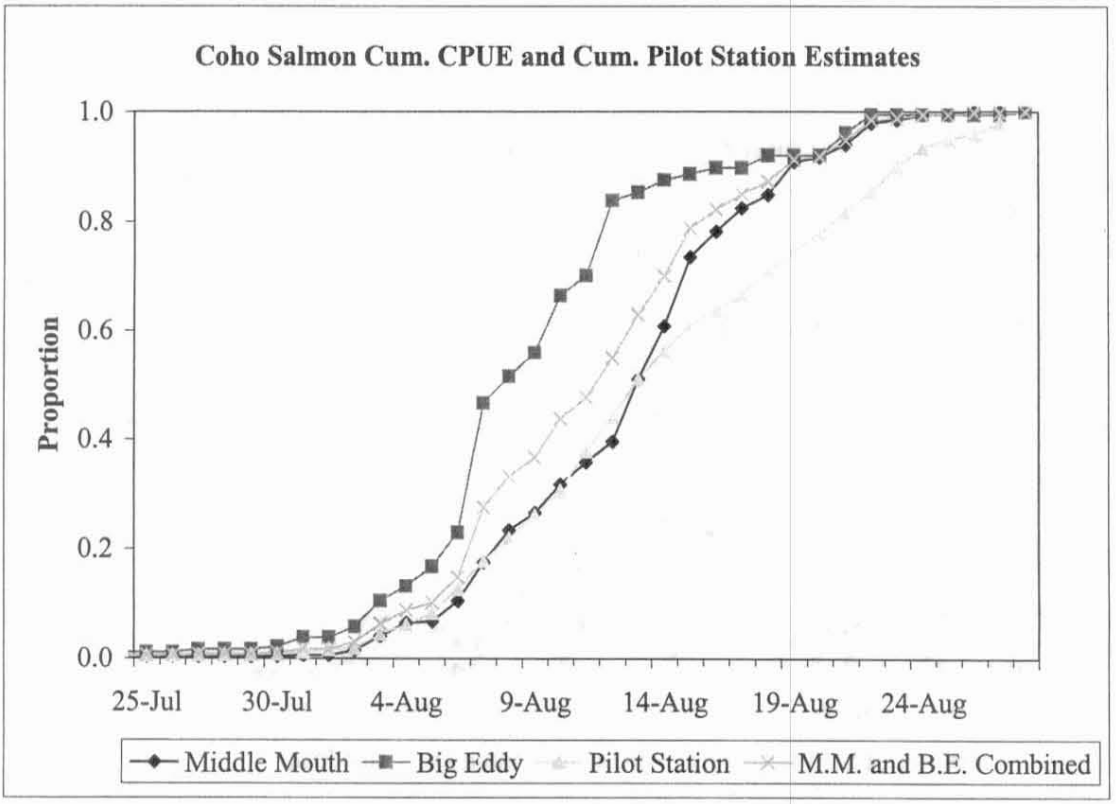

Figure 9. Cumulative CPUE of coho for the Lower Yukon 6" fall drift gill net test fishery compared to the cumulative total of coho salmon for Pilot Station sonar estimates adjusted for transit time, 2001.

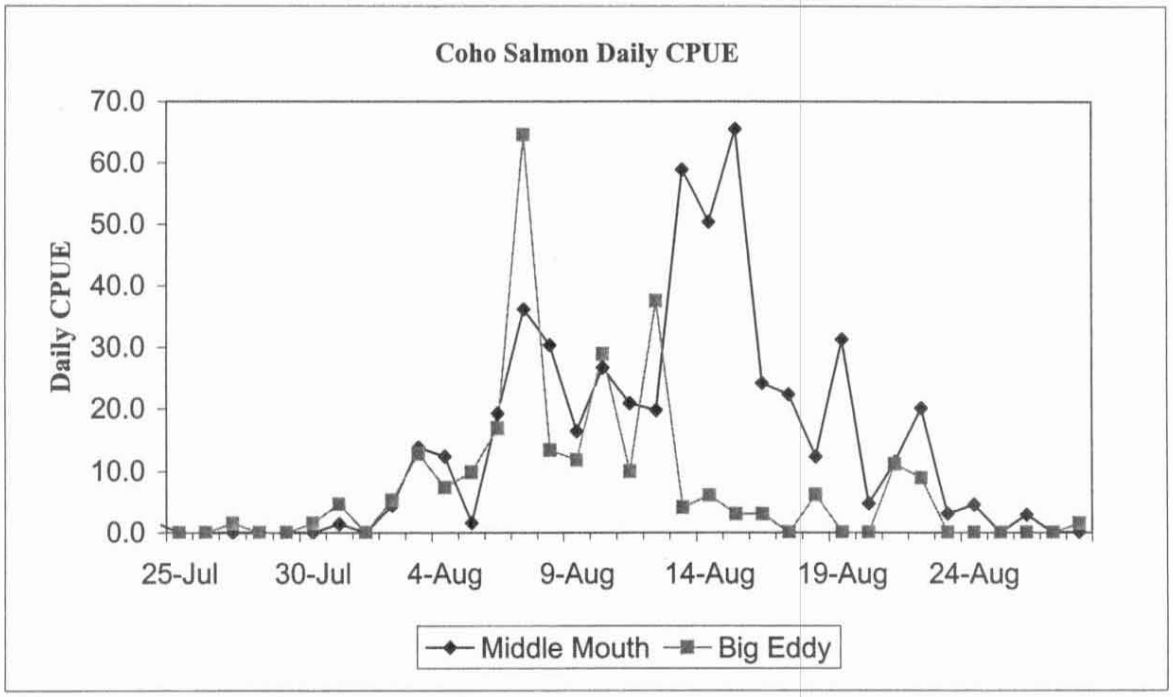

Figure 10. Daily CPUE for coho salmon from Middle Mouth and Big Eddy 6.0" fall drift gillnet test fishery, 2001.

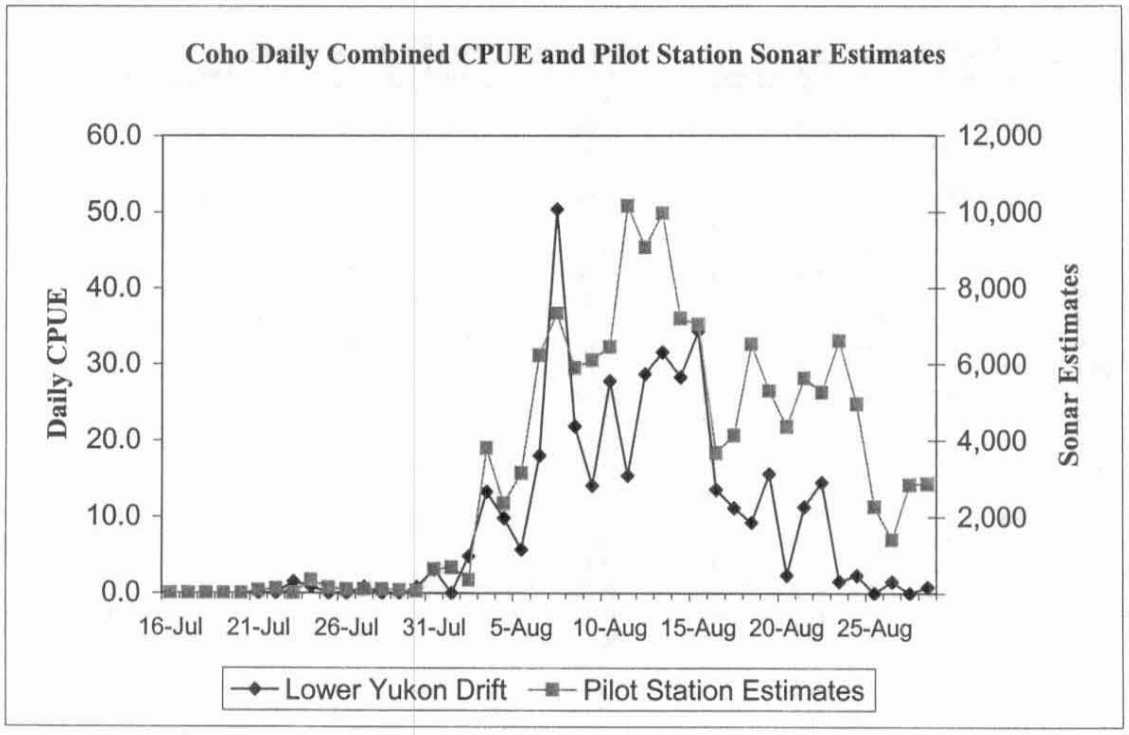

Figure 11. Combined daily CPUE for the Lower Yukon 6.0" drift gillnet test fishery compared to sonar passage estimates from Pilot Station adjusted for transit time, 2001.

APPENDIX A: LOWER YUKON DRIFT GILLNET TEST FISHERY SOAK TIMES, 2001.

Appendix A.1. Big Eddy and Middle Mouth drift gillnet test fishery soak times, 2001.

Big Eddy 8.25" drift gillnet chinook test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Chinook
8-Jun	19.0	19.0	19.0		57.0	2
9-Jun	19.0	20.0	19.5	18.5	77.0	6
10-Jun	19.0	17.5	18.5	18.0	73.0	1
11-Jun	18.0	18.5	20.5	18.5	75.5	5
12-Jun	18.0	18.0	20.0	21.0	77.0	21
13-Jun	20.0	19.0	19.0	19.5	77.5	47
14-Jun	15.5	14.5	11.0	16.5	57.5	49
15-Jun	7.0	16.0	16.0	19.0	58.0	22
16-Jun	20.5	21.0	16.5	20.5	78.5	34
17-Jun	17.0	17.5	18.0	18.0	70.5	1
18-Jun	17.5	18.5	18.0	18.0	72.0	0
19-Jun	20.0	21.0	18.5	26.0	85.5	5
20-Jun	18.0	18.0	18.5	16.5	71.0	4
21-Jun	13.0	19.5	14.0	18.5	65.0	48
22-Jun	18.5	20.0	16.5	21.5	76.5	31
23-Jun	16.0	15.0	10.5	23.5	65.0	37
24-Jun	17.5	18.5			36.0	20
25-Jun	15.0	18.5	12.5	17.5	63.5	22
26-Jun	18.0	21.5	19.0	17.0	75.5	18
27-Jun	16.0	14.5	15.0	18.0	63.5	11
28-Jun	16.5	16.5	17.0	17.5	67.5	5
29-Jun	17.0	16.5	17.5	17.0	68.0	6
30-Jun	17.5	18.5	18.0	16.5	70.5	3
1-Jul	18.0	20.0	19.5	20.0	77.5	4
2-Jul	17.5	23.0	17.0	18.5	76.0	1
3-Jul	20.5	17.5	17.0	19.0	74.0	1
4-Jul	20.0	20.5	20.0	23.5	84.0	2
5-Jul	16.5	18.5	20.5	17.5	73.0	2
6-Jul	21.5	19.5	18.0	19.0	78.0	0
7-Jul	18.5	21.0			39.5	0
8-Jul	22.0	20.5	20.5	21.0	84.0	0
9-Jul	18.5	20.5	19.5	20.0	78.5	0
10-Jul	19.0	19.5	19.5	19.5	77.5	0
11-Jul	20.0	19.5	19.0	14.5	73.0	0
12-Jul	20.0	19.5	21.0	20.0	80.5	0
13-Jul	20.0	19.5	20.0	21.0	80.5	0
14-Jul	21.0	19.5	19.0	20.0	79.5	0
15-Jul	19.5	19.5	17.5	17.5	74.0	0
Daily Average					71.3	
Drift Average		18.4		Catch Total		408

Middle Mouth 8.25" drift gillnet chinook test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Chinook
8-Jun					0.0	
9-Jun					0.0	
10-Jun					0.0	
11-Jun					0.0	
12-Jun	21.5	19.0			40.5	0
13-Jun	21.0	19.5	20.0	17.0	77.5	2
14-Jun	16.5	18.5	19.0	20.0	74.0	0
15-Jun	20.0	20.5	23.0	21.5	85.0	0
16-Jun	20.5	20.0	20.0	20.0	80.5	5
17-Jun	20.0	19.5	20.0	19.0	78.5	0
18-Jun	19.5	20.0	18.5	19.0	77.0	0
19-Jun	21.0	17.5	13.5	14.0	66.0	2
20-Jun	19.5	21.0	17.5	19.5	77.5	0
21-Jun	19.5	20.5	20.5	20.0	80.5	0
22-Jun	19.0	19.0	20.0	22.0	80.0	0
23-Jun	21.5	18.5	22.5	20.5	83.0	9
24-Jun	19.0	20.0			39.0	3
25-Jun	26.0	20.0	18.5	20.0	84.5	19
26-Jun	22.5	20.5	21.5	21.0	85.5	20
27-Jun	24.0	23.5	22.0	20.0	89.5	27
28-Jun	18.0	20.5	21.5	18.5	78.5	22
29-Jun	20.0	24.5	19.5	20.0	84.0	4
30-Jun	19.0	19.5	20.5	19.5	78.5	1
1-Jul	20.0	20.0	19.5	19.0	78.5	0
2-Jul	20.0	20.0	20.0	19.5	79.5	0
3-Jul	19.5	19.5	20.5	20.0	79.5	0
4-Jul	19.5	19.5	20.0	20.5	79.5	1
5-Jul	19.5	19.0	20.5	19.5	78.5	8
6-Jul	19.0	20.0	20.0	19.0	78.0	4
7-Jul	18.5	17.5			36.0	0
8-Jul	18.5	19.5	20.0	17.5	75.5	3
9-Jul	20.0	18.5	21.5	19.0	79.0	5
10-Jul	20.5	17.0	19.0	19.0	75.5	0
11-Jul	18.5	18.5	19.0	18.5	74.5	1
12-Jul	19.5	19.5	18.0	19.5	76.5	0
13-Jul	21.0	19.5	19.0	18.5	78.0	0
14-Jul	19.0	19.0	19.5	20.0	77.5	0
15-Jul	19.0	19.5	19.5	20.0	78.0	0
Daily Average					75.4	
Drift Average		19.7		Catch Total		136

Continued

Big Eddy 5.5" drift gillnet summer chum test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Chum
8-Jun	16.5	18.5	19.0	20.5	74.5	0
9-Jun	18.5	18.5	18.0	19.0	74.0	1
10-Jun	18.0	18.0	19.5	18.0	73.5	0
11-Jun	18.0	18.5	18.5	20.0	75.0	0
12-Jun	18.5	16.0	18.5	19.5	72.5	3
13-Jun	17.5	18.0	19.0	16.0	70.5	41
14-Jun	12.5	24.0	10.5	20.0	67.0	162
15-Jun	11.0	12.5	18.0	15.5	57.0	41
16-Jun	21.5	16.5	18.0	17.5	73.5	43
17-Jun	18.0	18.5	18.0	19.5	74.0	34
18-Jun	18.5	20.0	19.5	17.5	75.5	20
19-Jun	19.0	19.5	17.0		55.5	8
20-Jun	19.0	18.5	19.5	17.5	74.5	10
21-Jun	17.0	19.0	19.5	20.0	75.5	83
22-Jun	24.5	18.0	14.5	19.5	76.5	83
23-Jun	12.0	20.0	19.5	23.5	75.0	116
24-Jun	17.0	12.5			29.5	59
25-Jun	18.0	20.5	22.0	19.5	80.0	110
26-Jun	19.0	22.5	19.5	18.5	79.5	108
27-Jun	22.0	17.5	16.0	18.0	73.5	151
28-Jun	19.5	14.5	16.0	17.5	67.5	38
29-Jun	18.5	18.0	17.5	17.5	71.5	14
30-Jun	18.5	21.5	18.5	22.0	80.5	85
1-Jul	17.5	19.0	17.0	23.0	76.5	25
2-Jul	20.5	18.5	18.5	20.0	77.5	11
3-Jul	19.5	18.5	19.0	25.5	82.5	11
4-Jul	22.0	19.0	21.5	19.5	82.0	18
5-Jul	20.5	20.0	18.5	18.0	77.0	2
6-Jul	19.5	20.0	18.5	18.5	76.5	7
7-Jul	20.5	19.5			40.0	1
8-Jul	19.0	20.0	20.5	19.0	78.5	5
9-Jul	20.0	20.0	20.5	19.0	79.5	0
10-Jul	20.0	19.0	20.0	19.0	78.0	0
11-Jul	19.0	19.0	20.0	20.0	78.0	1
12-Jul	19.5	19.5	19.0	19.5	77.5	0
13-Jul	19.5	20.0	19.5	21.5	80.5	0
14-Jul	19.5	19.5	20.5	20.0	79.5	0
15-Jul	18.5	19.0	17.5	17.5	72.5	0
Daily Average					72.7	
Drift Average			18.8	Catch Total		1,291

Middle Mouth 5.5" drift gillnet summer chum test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Chum
8-Jun						
9-Jun						
10-Jun						
11-Jun						
12-Jun	20.5	21.0			41.5	0
13-Jun	20.0	19.5	13.5	16.0	69.0	1
14-Jun	19.5	18.0	18.5	22.5	78.5	1
15-Jun	19.0	21.0	17.0	18.5	75.5	0
16-Jun	18.5	19.5	19.5	18.5	76.0	0
17-Jun	19.0	19.0	16.5	18.5	73.0	7
18-Jun	20.0	20.0	18.5	19.0	77.5	5
19-Jun	22.5	18.5	12.0	13.5	66.5	1
20-Jun	12.5	21.5	20.0	18.5	72.5	0
21-Jun	19.0	19.0	21.0	20.0	79.0	0
22-Jun	19.0	20.5	18.5	21.0	79.0	0
23-Jun	14.0	20.0	21.0	20.0	75.0	10
24-Jun	21.0	18.0			39.0	9
25-Jun	26.5	23.0	16.0	20.0	85.5	90
26-Jun	19.5	21.5	23.0	21.5	85.5	18
27-Jun	17.5	24.0	22.5	23.0	87.0	63
28-Jun	26.0	20.0	16.0	21.0	83.0	121
29-Jun	19.5	19.5	20.0	18.5	77.5	2
30-Jun	19.0	19.5	20.0	19.5	78.0	1
1-Jul	20.0	19.5	20.0	19.5	79.0	2
2-Jul	19.0	19.0	20.0	21.0	79.0	1
3-Jul	20.0	20.0	19.5	20.5	80.0	10
4-Jul	19.5	20.5	19.5	19.5	79.0	19
5-Jul	19.5	21.0	19.5	19.5	79.5	26
6-Jul	18.0	19.5	20.5	19.5	77.5	6
7-Jul	21.0	18.5			39.5	16
8-Jul	20.5	18.0	21.0	19.5	79.0	21
9-Jul	21.5	18.0	21.0	18.5	79.0	10
10-Jul	17.0	17.0	19.0	20.0	73.0	3
11-Jul	18.5	19.5	18.5	18.0	74.5	0
12-Jul	19.5	19.5	19.5	19.5	78.0	1
13-Jul	19.5	19.0	19.5	19.0	77.0	0
14-Jul	18.5	18.5	18.5	20.5	76.0	0
15-Jul	19.5	19.0	20.0	19.0	77.5	0
Daily Average					74.3	
Drift Average			19.4	Catch Total		444

Continued

Big Eddy 6.0" drift gillnet fall test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Fall chum	Coho
16-Jul	20.0	20.0	19.0	22.5	81.5	26	0
17-Jul	21.0	21.0	17.5	16.5	76.0	105	0
18-Jul	21.0	22.5	21.0	19.0	83.5	52	0
19-Jul	19.5	21.5	19.5	19.5	80.0	11	0
20-Jul	20.5	19.5	19.5	21.0	80.5	0	0
21-Jul	19.0	20.5	17.5	18.5	75.5	0	0
22-Jul	20.0	20.0	18.5	18.5	77.0	5	0
23-Jul	20.0	20.5			40.5	27	1
24-Jul	19.0	19.0	20.0	20.0	78.0	23	0
25-Jul	19.0	20.0	20.0	20.0	79.0	2	0
26-Jul	20.0	20.0	20.0	20.0	80.0	1	0
27-Jul	19.5	20.0	19.0	20.0	78.5	12	1
28-Jul	20.0	19.5	20.0	20.0	79.5	5	0
29-Jul	20.0	20.0	18.5	17.5	76.0	0	0
30-Jul	20.0	20.0	20.0	20.0	80.0	8	1
31-Jul	19.0	18.5	20.0	21.0	78.5	51	3
1-Aug	19.0	20.5	17.5	18.5	75.5	5	0
2-Aug	20.5	20.5	21.0	24.5	86.5	113	4
3-Aug	20.5	23.5	20.5	21.0	85.5	48	9
4-Aug	19.0	21.0	15.5	19.5	75.0	13	5
5-Aug	20.0	20.0	22.0	19.5	81.5	9	7
6-Aug	22.5	28.5			51.0	76	8
7-Aug	31.0	15.5	17.0	19.0	82.5	83	42
8-Aug	18.0	19.0		20.0	57.0	1	6
9-Aug	22.0	19.0	17.5	19.5	78.0	8	8
10-Aug	20.0	20.0	18.0	22.0	80.0	6	19
11-Aug	20.0	22.0	19.0	19.5	80.5	1	7
12-Aug	18.0	19.5	20.0	19.5	77.0	18	24
13-Aug	19.0	20.0		19.0	58.0	3	2
14-Aug	19.5	19.5	20.0	20.0	79.0	1	4
15-Aug	20.0	19.0	19.5	20.0	78.5	0	2
16-Aug	19.5	20.0	20.0	20.5	80.0	0	2
17-Aug	20.0	20.0	19.5	19.0	78.5	1	0
18-Aug	19.5	20.0	20.0	19.0	78.5	0	4
19-Aug	19.0	20.0	20.0	19.5	78.5	0	0
20-Aug			19.5	20.0	39.5	1	0
21-Aug	19.0	20.5			39.5	15	8
22-Aug	20.0	20.0	20.0	20.5	80.5	1	6
23-Aug			20.0	20.0	40.0	0	0
24-Aug	19.0	19.0	19.0	19.5	76.5	0	0
25-Aug	21.5	18.5	19.5	20.5	80.0	0	0
26-Aug	18.5	19.5	18.5	19.0	75.5	0	0
27-Aug	18.5	18.5	19.5	18.5	75.0	0	0
28-Aug	21.5	19.5	20.0	20.0	81.0	0	1
Daily Average					73.9		
Drift Average			19.8	Catch Total		731	174

Middle Mouth 6.0" drift gillnet fall test fishery, 2001.

Date	Time 1	Time 2	Time 3	Time 4	Total	Fall chum	Coho
16-Jul	20.5	20.0	20.0	15.5	76.0	3	0
17-Jul	21.5	21.0	19.0	21.0	82.5	87	0
18-Jul	20.0	16.5	19.5	23.0	79.0	131	0
19-Jul	20.5	21.0	21.5	20.0	83.0	27	0
20-Jul	20.0	20.0	19.5	18.5	78.0	2	0
21-Jul	20.0	20.0	20.0	18.5	78.5	4	0
22-Jul	20.0	19.0	20.0	20.0	79.0	3	0
23-Jul	22.0	22.0			44.0	8	0
24-Jul	22.0	19.5	17.0	19.0	77.5	60	1
25-Jul	17.5	19.5	21.0	15.5	73.5	36	0
26-Jul	20.0	22.5	20.0	19.5	82.0	5	0
27-Jul	18.5	19.0	19.0	20.0	76.5	3	0
28-Jul	19.0	20.5	19.5	20.5	79.5	1	0
29-Jul	19.0	19.5	19.5	19.5	77.5	1	0
30-Jul	20.0	19.5	19.5	20.5	79.5	2	0
31-Jul	20.5	21.0	16.5	20.5	78.5	68	1
1-Aug	16.5	20.5	19.0	19.0	75.0	50	0
2-Aug	20.0	20.0	21.5	20.0	81.5	53	3
3-Aug	22.0	23.0	18.0	19.0	82.0	101	10
4-Aug	19.5	19.0	20.0	20.0	78.5	17	8
5-Aug	20.0	20.0	19.0	19.5	78.5	1	1
6-Aug	22.0	21.0			43.0	11	2
7-Aug	21.0	21.0	24.0	27.0	93.0	142	28
8-Aug	20.5	19.5	19.0	19.0	78.0	41	20
9-Aug	13.0	10.5	21.0	19.0	63.5	20	7
10-Aug	20.0	22.0	20.5	22.0	84.5	14	27
11-Aug	19.5	19.0	20.5	20.0	79.0	3	14
12-Aug	23.0	23.5	20.0	20.0	86.5	17	14
13-Aug	21.0	22.5	20.0	20.5	84.0	36	41
14-Aug	19.0	21.5	21.0	20.0	81.5	23	35
15-Aug	20.5	20.0	20.0	20.0	80.5	15	44
16-Aug	20.5	19.0	18.5	20.0	78.0	5	16
17-Aug	19.5	20.0	19.0	13.5	72.0	1	14
18-Aug	20.0	19.5	19.5	19.5	78.5	3	8
19-Aug	18.5	16.0	18.0	19.5	72.0	0	18
20-Aug	19.0	19.0	18.5	19.5	76.0	1	3
21-Aug	20.5	21.0			41.5	4	8
22-Aug	20.0	19.0	18.5	20.0	77.5	4	13
23-Aug	19.0	19.5	19.5	20.0	78.0	0	2
24-Aug	19.0	19.5	19.5	20.0	78.0	1	3
25-Aug	19.0	20.0	19.5	20.0	78.5	0	0
26-Aug	20.5	20.0	20.0	21.0	81.5	0	2
27-Aug	20.0	19.5	20.0	20.0	79.5	0	0
28-Aug	20.0	20.0	20.0	20.0	80.0	0	2
Daily Average					76.5		
Drift Average			19.8	Catch Total		1,004	345

APPENDIX B: LOWER YUKON DRIFT GILLNET TEST FISHERY CATCH DISTRIBUTION, 2001.

Appendix B.1. Species captured, retained, and released during the lower Yukon drift gillnet test fishery summer and fall seasons, 2001.

Summer season	Big Eddy		Middle Mouth		Cumulated Total	
Species	Chinook	Chum	Chinook	Chum	Chinook	Chum
Fish released unharmed	145	58	18	108	163	166
Test fish sales						
Fish discarded	20	70	7	19	27	89
Test fish donated locally	380	1,330	128	368	508	1,698
Total catch	545	1,458	153	495	698	1,953

Fall season	Big Eddy		Middle Mouth		Cumulated Total	
Species	Chum	Coho	Chum	Coho	Chum	Coho
Fish released unharmed	21	5	23	22	44	27
Test fish sales						
Fish discarded	36	8	49	16	85	24
Test fish donated locally	675	161	934	307	1,609	468
Total catch	732	174	1,006	345	1,738	519

Appendix C. **PULSES FOR CHUM SALMON TRANSITING THE LOWER YUKON RIVER DRAINAGE, 2001.**

Appendix C.1. Pulses for fall chum salmon past Emmonak and continuing up the Yukon River drainage, 2001

Community	River Miles	Days Between Sites	Pulse 1	Pulse 2	Pulse 3	Pulse 4	Pulse 5	Pulse 6	Pulse 7
Travel in miles per day		35	35	35	35	35	-	-	-
Emmonak	24	0	17-Jul	23-Jul	31-Jul	6-Aug	-	-	-
Mt. Village	87	1.8	18-Jul	25-Jul	1-Aug	8-Aug	-	-	-
Pilot Station	123	2.8	19-Jul	26-Jul	2-Aug	9-Aug	-	-	-
Marshall	161	3.9	20-Jul	27-Jul	3-Aug	10-Aug	-	-	-
Russian Mission	213	5.4	22-Jul	28-Jul	5-Aug	11-Aug	-	-	-
Anvik	318	8.4	25-Jul	31-Jul	8-Aug	14-Aug	-	-	-
Kaltag	450	12.2	29-Jul	4-Aug	12-Aug	18-Aug	-	-	-
Koyukuk	502	13.7	30-Jul	5-Aug	13-Aug	19-Aug	-	-	-
Galena	530	14.5	31-Jul	6-Aug	14-Aug	20-Aug	-	-	-
Ruby	581	15.9	1-Aug	8-Aug	15-Aug	22-Aug	-	-	-
Tanana	695	19.2	5-Aug	11-Aug	19-Aug	25-Aug	-	-	-
Rapids	731	20.2	6-Aug	12-Aug	20-Aug	26-Aug			-
Rampart	763	21.1	7-Aug	13-Aug	21-Aug	27-Aug			-
Stevens Village	847	23.5	9-Aug	15-Aug	23-Aug	29-Aug			-
Fort Yukon	1,002	27.9	13-Aug	20-Aug	27-Aug	3-Sep			-
Circle	1,061	29.6	15-Aug	21-Aug	29-Aug	4-Sep			-
Canadian Border	1,224	34.3	20-Aug	26-Aug	3-Sep	9-Sep			-